

# COMPUTERWORLD

THE VOICE OF IT MANAGEMENT ■ WWW.COMPUTERWORLD.COM

JANUARY 26, 2004 ■ VOL. 38 ■ NO. 4 ■ \$5/COPY

## Internal Resistance Can Doom Offshore Projects

Disgruntled insiders may block outsourcing; care needed when choosing project leaders

BY PATRICK THIBODEAU  
NEW YORK

The most serious threat to companies' efforts to send work offshore isn't coming from angry protesters and politicians. It's coming from managers who are intent on torpedoing their companies' offshore projects, executives in charge of such projects said last week.

Disgruntled managers,

worried about shifts in responsibilities or the loss of their jobs or the jobs of co-workers, can easily thwart offshore projects, the executives said.

Opposition can take many forms. Individuals may block meetings with vendors and consultants, raise numerous points of opposi-

tion throughout the process in an effort to frustrate it, or even take more nefarious actions such as sabotaging code developed offshore, the executives explained.

Rick Pfeiffer, former head of Asia-Pacific IT and operations at General Electric Co., one of the first U.S.

companies to move work offshore, said that 60% of offshore project failures can be attributed to "someone directly Offshoring, page 10

### INSIDE

Self-censorship about offshoring is unspeakable, says Maryfran Johnson. **Page 18**

## Users Weigh Linux Risk

LinuxWorld attendees vary on the need for a shield from lawsuits

BY TODD R. WEISS  
NEW YORK

IT professionals appear to be split on whether new legal indemnification programs from major Linux vendors will fuel wider adoption of the open-source operating system.

At the LinuxWorld Conference & Expo here last week, a sampling of users in businesses where IT is mission-critical, such as insurance and health care administration, said the expanded indemnification programs make them more comfortable with Linux. But they said other factors re-

main to be addressed inside their companies before they can decide how to proceed.

Other users said indemnification simply isn't an issue for them or is at best far down on their lists of criteria for Linux adoption.

The topic of indemnifying, or protecting, companies that use Linux from legal actions similar to the lawsuit filed earlier this year by The SCO Group Inc. against IBM arose frequently during last week's event. IBM in fact said that it

*LinuxWorld, page 14*

## Retailers See RFID Ahead

Say it's only a matter of time before adoption

BY CAROL SLIWA

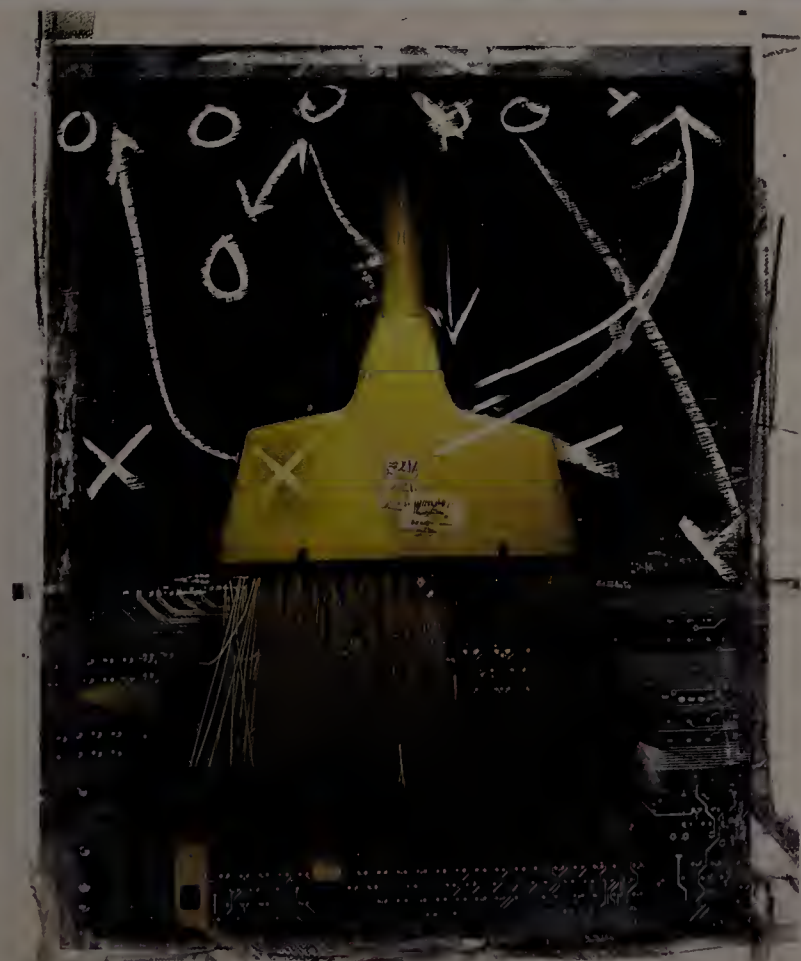
Retail executives are now saying "when," not "if," as they consider the use of radio frequency identification tags to track goods through their supply chains and ultimately in their stores.

That's a marked change from a year ago, when many expressed guarded sentiments about RFID's prospects and

*Retail RFID, page 51*

## SOFTWARE Sweep

**SHELFWARE** – software licenses sitting unused – can accumulate for a variety of reasons, including poor asset management, canceled or scaled-back projects, corporate downsizing and bad purchasing decisions. We've identified four strategies for clearing the shelves. **PAGE 35**



ARAS/ASIA VACH/ANIS

### Barriers to RFID

Too expensive	61%
Suppliers don't use it	52%
Difficult to integrate	31%
Consumers' privacy concerns	30%
Too complicated	23%

■ Multiple responses allowed

SOURCE: POLL OF 67 RETAILERS CONDUCTED BY BEAUPONT INC. AND THE NATIONAL AIL FEDERATION, 2004



Great Moments at Work.





**Microsoft**  
Your potential. Our passion.

## Introducing the new Microsoft Office System.

Now users can do more for themselves so you can focus on the important things. More than just the core suite you're familiar with, the new Microsoft® Office System is an integrated system of easy-to-use, expanded programs, servers, services, and solutions that help end users be more self-sufficient. With Microsoft Office Professional Edition 2003, Microsoft Windows® SharePoint™ Services, and Microsoft Office SharePoint Portal Server 2003, end users will have the ability to create and manage their own team work spaces. So not only will they be able to collaborate and share information easily and more securely, but you'll be free to do what you really need to do. To find out how the Microsoft Office System can work for you, **go to [microsoft.com/officelT](http://microsoft.com/officelT)**

### Microsoft Office System

More than what it used to be, it's now a comprehensive, customizable system.

#### Programs

Access 2003  
Excel 2003  
FrontPage® 2003  
InfoPath™ 2003  
OneNote™ 2003  
Outlook® 2003

PowerPoint® 2003  
Project 2003  
Publisher 2003  
Visio® 2003  
Word 2003

#### Servers

Project Server 2003  
Live Communications Server 2003  
Exchange Server 2003  
SharePoint™ Portal Server 2003

#### Services

Live Meeting  
Office Online

#### Solutions

Solution Accelerators

#### Enabling Technologies:

Windows Server™ 2003, Windows® SharePoint Services, Rights Management Services





12:37 pm No one asks for help with  
setting up a sales team web site.





## AT DEADLINE

## Former CA Finance Exec Pleads Guilty

A former Computer Associates International Inc. finance executive who resigned in October pleaded guilty to obstruction of justice in connection with a federal investigation of CA's accounting practices. CA said Lloyd Silverstein, who was its senior vice president of finance, also lied to internal investigators when asked about alleged improper revenue recognition. The Securities and Exchange Commission is considering civil charges against the company.

## AT&amp;T Wireless Puts Itself Up for Sale

AT&T Wireless Services Inc. confirmed that its board is considering a possible sale, but officials at the Redmond, Wash.-based company declined to set a timetable for striking a deal. AT&T Wireless also reported an \$84 million fourth-quarter loss and said customer turnover increased partly as a result of a problematic CRM upgrade [QuickLink 42831].

## Microsoft Reports 19% Revenue Gain

Microsoft Corp. said revenue in its second quarter rose 19% year over year to \$10.15 billion, with strong PC demand leading to double-digit growth in sales of Office and Windows XP. The company had a \$1.55 billion profit for the quarter, which ended Dec. 31.

Microsoft also eased the terms under which it licenses Windows communications protocols to other technology vendors.

## Savvis to Acquire C&amp;W Hosting Unit

Cable & Wireless PLC's U.S. Web hosting unit has accepted a buy-out offer from Savvis Communications Corp. in St. Louis. C&W last month agreed to sell its assets to Gores Technology Group LLC [QuickLink 43474], but other buyers had a chance to outbid Gores in U.S. Bankruptcy Court.

## Segway's Tech Plans Look Down the Road to Growth

## Transporter maker builds IT strategy around Oracle, VoIP and outsourcing

BY THOMAS HOFFMAN  
MANCHESTER, N.H.

INSTALLING an outsourced set of enterprise-class finance and manufacturing applications and deploying a voice-over-IP system aren't your typical small-company moves. But Segway LLC isn't a typical small company.

Segway made news in December 2001 when it introduced the Human Transporter, a self-balancing, two-wheeled transportation device that was the brainchild of founder Dean Kamen. The company's IT infrastructure includes VoIP technology that was put in place last summer and a finance system that was upgraded late last year to a new version of Oracle Corp.'s E-Business Suite 11i applications.

The finance system is hosted by Fremont, Calif.-based Appshop Inc., which manages the Oracle applications from a Sprint Corp. data center in Denver. Segway CIO Patrick Zilvitis said in an interview this month that when he joined the company in the fall of 2000, he quickly decided that outsourcing would be the wisest path for a start-up that had a minimal IT infrastructure and wanted to hold down its technology costs.

"I suggested that we shouldn't build a data center or a big, dedicated IT staff but instead [should] use software under a hosted environment that we could grow with," said Zilvitis, who was CIO at The Gillette Co. before taking the Segway job on a part-time basis.

Outsourcing "allows us to upsize or downsize our IT infrastructure as needed," noted Scott Frock, Segway's director of finance. "For a small-to-medium-size company, there are a lot of advantages."

Outsourcing also lets companies like Segway avoid up-front investments in servers, software and technical support staffers, said Terry Jost, a Dallas-based consultant at Cap Gemini Ernst & Young LLP.

The Oracle applications were initially rolled out in early 2001. Before Zilvitis came on board, Segway had been using Intuit Inc.'s QuickBooks accounting software. He said that to support its expansion, the company had to upgrade to

an accounting package designed for small and midsize businesses or a larger system

that it could grow into.

Segway opted for the second choice to avoid the potential need for a "painful and expensive" conversion later, Zilvitis said.

After evaluating software from Oracle and SAP AG, the company chose an uncus-tomized version of the Oracle suite that's geared to discrete manufacturers. The system includes manufacturing and order management modules in addition to the finance applications, and workers at Segway's headquarters here and its manufacturing plant in nearby Bedford, N.H., access the software via Windows 2000 PCs.

## Poised for Expansion

Segway began upgrading to Oracle's 11.5.9 release over the Thanksgiving weekend and completed work on the core applications late last month.

The company is also adding software that will let workers at its customer service partner, Frazer, Pa.-based DecisionOne, access product warranty data and other information via Web browsers. Zilvitis said that capability should be

**"I suggested that we shouldn't build a data center or a big, dedicated IT staff."**

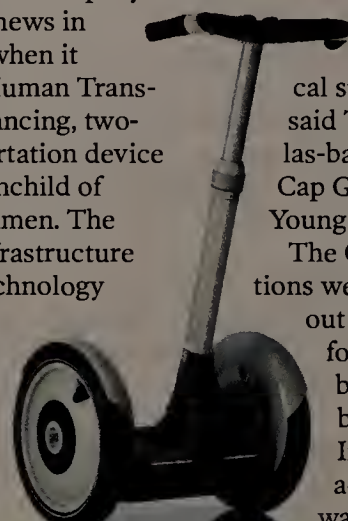
PATRICK ZILVITIS, CIO, SEGWAY

added within six months.

To more effectively support network connections to Appshop and its own manufacturing plant, Segway replaced its private branch exchange switches with VoIP equipment for "considerably less than \$20,000," Zilvitis said.

He added that the transition has provided several benefits, including the ability to set up low-cost switchboard extensions for remote employees, extra voice and data bandwidth for future growth, and cheap yet reliable connections to Sprint's data center.

For instance, Segway's Internet connection to Denver costs the company \$1,000 to \$2,000 per month, according to Zilvitis. By contrast, the monthly tab for a T-1 connection would have been \$10,000 to \$12,000, he said. **44266**



Segway's Human Transporter first made headlines in 2001.

## Company Makes Do With Part-time CIO – for Now

When Patrick Zilvitis took early retirement from Boston-based Gillette in 1999 after a decade as its CIO, he looked forward to skiing, hiking and spending more time with his family. Then in 2000, Zilvitis got a call from a recruiter working on behalf of a Segway investor.

It didn't take long for Zilvitis to become enamored with the start-up. However, he told Segway executives that he would agree to run the company's IT operations only if he could be a part-time CIO who worked just a

few days a week. The company agreed, and Zilvitis said the part-time gig has worked out well for both him and Segway.

In addition to Zilvitis, the IT staff currently includes three people: an Oracle administrator and two people who manage LANs, WANs, voice networks and Segway's PCs and servers. Zilvitis said he frequently checks e-mail when he's not at work, but the employees who report to him are "entrusted with more autonomy than usual."

Things will soon be changing,

though. The company is growing and is about to reach the point where it will need to have a full-time CIO, said Zilvitis, adding that he expects to find a replacement within the next six months.

The temporary nature of Zilvitis' job was part of the understanding between him and Segway from Day 1, Zilvitis noted.

"I told them that if the company took off, I would replace myself with someone who could manage IT full time," he said.

— Thomas Hoffman



# Experts Split on Internet-based Absentee Voting System's Security

Four members of review panel claim hackers could easily influence elections

BY JAIKUMAR VIJAYAN

A federally funded Internet-based voting system slated for use in this year's primary and general elections has unresolved security vulnerabilities that leave it open to widespread vote tampering and privacy breaches.

That opinion was expressed last week by four members of a 10-person peer review group assigned to identify potential flaws in the Secure Electronic Registration and Voting Experiment (SERVE). Backers of SERVE counter that the security concerns are being overblown.

The system is being developed as part of a government initiative to make it easier for U.S. armed forces personnel and overseas civilians to vote. But the four critical members of the peer review group said that the SERVE system has so many vulnerabilities that further development should be immediately abandoned.

## Potential Weaknesses

The problems lie in the inherent insecurities associated with Internet and PC-based systems, said David Wagner, an associate professor at the University of California, Berkeley, and one of the security experts assigned to review the prototype SERVE system.

The potential threats include viruses and worms, denial-of-service attacks and Web site spoofing, Wagner said. An attack using any of those methods on the main SERVE system or any of the PCs being used by voters could seriously compromise the results, Wagner said. "SERVE is susceptible to large-scale election fraud that could be launched from outside the reach of U.S. law and go completely undetected," he said.

For instance, it would be relatively easy for malicious

hackers to insert spoofed Web pages that appear to belong to the SERVE system but are actually designed to alter votes or prevent them from being cast. A voter using a PC infected with a virus or worm could easily jeopardize the integrity of the system, Wagner noted. And the particularly dangerous part is that such hacks could be carried out without ever being detected.

"I think that a dedicated and experienced hacker could subvert the election rather easily,"

said Avi Rubin, a professor at Johns Hopkins University and one of the security experts that reviewed SERVE. "I don't think that Internet-based voting such as SERVE can be made secure enough for use until we can develop computer systems that are not vulnerable to viruses and Trojan horses, and until we can develop an Internet that is resistant to denial-of-service attacks." The full report is available online [QuickLink a3970].

Meg McLaughlin, president of eDemocracy Services at Accenture Ltd., the prime contractor for the project, dismissed the concerns. "Every-

thing that was raised in this report, we have talked about in this project," McLaughlin said, adding that in each case steps have been taken to minimize the threat, including stringent user authentication and encryption of data.

Each online voter will also be presented with a confirmation screen that will allow him to verify whether the ballot has been properly received by SERVE. Information about the vote is also kept separate from information about the voter, and at no time will anyone be able to link the two together, McLaughlin added.



**"I think that a dedicated and experienced hacker could subvert the election rather easily."**

.....  
AVI RUBIN, professor, Johns Hopkins University

Thad Hall, program officer at The Century Foundation, a Washington-based public policy think tank, is one of the peer review members who disagrees with the security assessment of the four members who were critical of the system.

"The risks associated with an Internet-based voting system are no more or less than a paper-based system," he said. Hall added that the initial

SERVE tests were deliberately small in scope and weren't being viewed as an evaluation of a full-fledged voting system.

44255

## New Tools Shift Focus to Internal Network Security

Products designed to detect attacks from within emerge

BY JAIKUMAR VIJAYAN

Last year's Slammer and Blaster viruses, which spread via infected PCs, highlighted the need for IT managers to focus not only on perimeter defenses, but also on internal network vulnerabilities and compliance with security policies.

Since those attacks, several vendors have introduced products to help IT workers deal with both issues. The latest is Check Point Software Technologies Ltd., which last week introduced a security appliance called InterSpec that's designed to detect and block attacks originating from inside a company's network.

Redwood City, Calif.-based Check Point said InterSpec inspects internal network traffic for virus signatures and other patterns that suggest an attack is taking place. The technology lets users identify and quarantine infected systems to prevent any damage

### TECHNOLOGY DETAILS

#### InterSpec

- Blocks attacks and the spread of worms and viruses inside corporate networks
- .....
- Supports network segmentation to help contain attacks
- .....
- Lets IT managers quarantine and isolate suspicious systems

from spreading, said Shankar Swamy, a Check Point product manager. It also allows IT administrators to segment networks into separate security zones to further contain an attack.

Such capabilities are crucial for protecting networks against internal compromise, said InterSpec beta tester Greg Murray, vice president of information security at Information Resources Inc., a Chicago firm that does market research for food, consumer goods and pharmaceutical companies.

Some companies that were otherwise well protected got hit by the Blaster virus when mobile workers reconnected infected notebook and laptop

PCs to corporate networks, Murray said. Products like InterSpec can help users identify infected systems faster and cut them off from the rest of the network, he added.

"It automates the identification and containment of internal threats," said Murray, who has been testing InterSpec for several months. Information Resources, which stores more than 130TB of research data on its network, is using the Check Point technology to carve out separate network zones for each of its five testing and quality assurance labs.

Check Point's product joins a growing list of security tools with similar objectives. For example, Cisco Systems Inc. in November said it was teaming with Symantec Corp., Network Associates Inc. and Trend Micro Inc. to develop technologies to help companies block or safely quarantine PCs, servers and other devices that don't comply with corporate policies. Sygate Technologies Inc., InfoExpress Inc. and Zone Labs Inc. also sell products for enforcing security policies on systems used by remote workers.

Boston-based MFS Investment Management uses software developed by Found-

stone Inc. to continually scan and inventory the systems on its networks. The software helps MFS detect systems that are vulnerable to new security threats, assess the level of risk that the threats pose and prioritize responses, said Tom Clark, MFS's vice president of corporate systems security.

"The knowledge and ability to allocate the right resources to the right vulnerabilities at the right time has been the fundamental ROI," he said.

44261

## Corrections

A story about Calpine Corp. CIO Dennis Fishback that ran in the Premier 100 IT Leaders 2004 special section on Jan. 5 incorrectly reported the total amount of IT costs that Calpine has cut from its budget since 2001. The San Jose-based company has reduced costs by more than \$44 million, according to Fishback.

In the Jan. 12 Management feature "The Forest vs. the Trees," *Computerworld* should have noted that Paul A. Strassmann's Information Productivity methodology includes factors such as profits, cost of capital and capital risk, in addition to total costs of information.



Small Medium Business

# A world of IT solutions.

Whatever your world.



Dell has a customized IT solution for your business, no matter what business you're in, or what size it is. From PowerEdge™ servers featuring Intel® Xeon™ processors to network support products like PowerVault™ storage and PowerConnect™ switches, Dell offers flexible, high-performance industry-standard technologies and software solutions that are just right for your particular business needs. And we'll help you every step along the way. Whether it's planning and design, testing and validation, systems management, or our award-winning 24x7 service and support, Dell will help you create an IT infrastructure that's easy to choose, deploy and manage. So make life easy on yourself and get a big advantage over your competition – with a unique IT solution from Dell.

## PC Magazine Editors' Choice Award

PowerEdge 1750  
– October 28, 2003



Call: M-F 7a-8p Sat 8a-5p CT

Pricing, specifications, availability and terms of offer may change without notice. Taxes and shipping charges extra, and vary and not subject to discounts. U.S. Dell Small Business new purchases only. Dell cannot be held responsible for errors in typography or photography. \*This device has not been approved by the Federal Communications Commission for use in a residential environment. This device is not, and may not be, offered for sale or lease, or sold or leased for use in a residential environment until the approval of the FCC has been obtained. †Service may be provided by third party. Technician will be dispatched following prime-time service troubleshooting. Subject to parts availability, geographical restrictions and terms of service contract. Service timing dependent upon time of day call placed to Dell. U.S. only. \*\*DDR 333 memory runs at 320MHz when used with 800MHz FSB processors. \*Monthly payment based on pre-rebate price for 48 month 60 Days Same-as-Cash QuickLoan with 46 payments at 9.99% interest rate. Your interest rate and monthly payment may be same or higher, depending on your creditworthiness. If you do not pay the balance within 60 days of the QuickLoan Commencement Date (which is five days after product ships), interest will accrue during those first 60 days and a documentation fee may apply. OFFER VARIES BY CREDITWORTHINESS OF CUSTOMER AS DETERMINED BY LENDER. Minimum transaction size of \$500 required. Maximum aggregate financed amount for the paperless acceptance not to exceed \$25,000. If your



## File&Print Servers starting at \$399

Affordable servers that make  
managing your network easy.

### NEW POWEREDGE™ 400SC SERVER

#### Small Business Value Server

- Intel® Pentium® 4 Processor at 2.26GHz
- Upgradable to Intel® Pentium® 4 Processor at 3.20GHz with 800MHz Front Side Bus<sup>27</sup>
- 256MB 333MHz ECC DDR SDRAM (Up to 4GB)
- 40GB (7200 RPM) IDE Hard Drive
- Upgradable to 240GB of Internal Hard Drive Storage
- Embedded Intel® PRD Gigabit<sup>®</sup> NIC
- 1-Yr 24x7 Dedicated Server Phone Tech Support
- 1-Yr Next Business Day On-Site Service<sup>3</sup>
- Small Business Pricing

**\$649** as low as **\$18/mo.**, (46 pmts.<sup>29</sup>)  
E-VALUE Code: **20449-S20106g**

### POWEREDGE™ 650\* RACK SERVER

#### 1U Value Rack Server

- Intel® Pentium® 4 Processor at 2.60GHz
- Upgradable to Intel® Pentium® 4 Processor at 3.06GHz
- 512MB 266MHz ECC DDR SDRAM
- Upgradable to 4GB of SDRAM
- 40GB (7200 RPM) IDE Hard Drive
- Upgradable to 240GB of Internal Hard Drive Storage
- ATA100 IDE RAID Controller Available
- Intel® PRD Gigabit<sup>®</sup> NIC
- 3-Yr Next Business Day On-Site Service<sup>3</sup>
- Small Business Pricing

**\$1469** as low as **\$40/mo.**, (46 pmts.<sup>29</sup>)  
E-VALUE Code: **20449-S20114g**

## Database&Web Hosting Servers starting at \$1799

Flexible server solutions to  
manage diverse networks.

### POWEREDGE™ 2600 TOWER SERVER

#### Multi-Use Tower Server

- Intel® Xeon™ Processor at 2.40GHz
- Dual Intel® Xeon™ Processor Capable (Up to 3.20GHz)
- 512MB 266MHz ECC DDR SDRAM
- Upgradable to 6GB of DDR SDRAM
- Dual 18GB (15K RPM) Ultra320 SCSI Hot-Swap Hard Drives
- RAID 1 Included
- Active ID Bezel for Monitoring System Health
- 3-Yr Next Business Day On-Site Service<sup>3</sup>
- Small Business Pricing

**\$2349** as low as **\$63/mo.**, (46 pmts.<sup>29</sup>)  
E-VALUE Code: **20449-S20123g**

### POWEREDGE™ 1750\* RACK SERVER

#### Feature-Rich 1U Rack Server

- Intel® Xeon™ Processor at 2.40GHz
- Dual Intel® Xeon™ Processor Capable (Up to 3.20GHz)
- 512MB 266MHz ECC DDR SDRAM
- Upgradable to 6GB of DDR SDRAM
- 3x18GB (15K RPM) Ultra320 SCSI Hot-Swap Hard Drives
- RAID 5 Included
- Active ID Front Bezel for Monitoring System Health
- 3-Yr Next Business Day On-Site Service<sup>3</sup>
- Small Business Pricing

**\$2699** as low as **\$73/mo.**, (46 pmts.<sup>29</sup>)  
E-VALUE Code: **20449-S20126g**

## 4-Way Servers

Build a powerful, protected network.

### POWEREDGE™ 6600\* TOWER SERVER

#### High-Speed Mission Critical Tower Server

- Intel® Xeon™ Processor at 1.50GHz
- Quad Intel® Xeon™ Processor Capable (Up to 2.80GHz)
- 512MB DDR SDRAM
- Up to 32GB 266MHz DDR ECC SDRAM
- Up to 1752GB Maximum Internal HDD Storage
- Embedded Ultra SCSI Adaptec® (160MB/s) Controller
- Standard Hot-Swap Hard Drives, Hot-Swap Redundant Fans and Hot-Swap Redundant Power Supplies
- 10 Hot-Plug PCI-X Slots
- 3-Yr Next Business Day On-Site Service<sup>3</sup>

starting at  
**\$3999** as low as **\$107/mo.**, (46 pmts.<sup>29</sup>)  
E-VALUE Code: **20449-S20139g**

## Network Storage Options starting at \$199

### DELL™ POWERVAULT™ 725N NAS

#### Optimized File Storage Across the LAN

- Intel® Celeron® Processor at 2GHz
- Microsoft® Windows® Powered Network Attached Storage
- 384MB DDR SDRAM (Up to 3GB)
- 4x40GB (160GB) IDE Hard Drives
- Up to 1 Terabyte of Internal Storage Capacity

**\$1799** as low as **\$49/mo.**, (46 pmts.<sup>29</sup>)  
E-VALUE Code: **20449-S20117g**

### DELL/EMC

If you have more than 300GB of storage, visit  
**www.dell.com/storage4mybiz** for low prices on  
Dell/EMC storage arrays.

## Services

### Purchase

Dell offers a wide range of reliable, award-winning technology, all delivered from a single point of contact – and our expert sales associates are there to help you find the technology that's right for your business.

### Installation—Starting at \$279

Once you've selected the right technology, Dell can help you get it up and running quickly and cost-effectively with our custom on-site installation and configuration services.

### Training&Certification—Starting at \$100/person

After installation, Dell can help turn your employees or IT staff into experts on your new technology through a variety of training and certification courses – helping increase your business' long-term productivity.

### Service&Support

The support doesn't end at the sale. Dell's award-winning service and support offerings help ensure that your new network remains up and running – with Web, phone or on-site service<sup>3</sup> and support.

## Network Switches starting at \$89

### POWERCONNECT™ 3324\* SWITCH

#### High-Performance Workgroup Switch

- 24 Fast Ethernet Ports plus 2 Gigabit Uplinks (2 Copper and 2 SFP Transceiver Combo Slots for Fiber)
- Stacking Functionality of Up to 192 Ports
- Advanced Network Management and Security Features
- Industry Standard CLI and Easy-to-Use Web Interface
- 3-Yr Next Business Day Advanced Exchange Service<sup>28</sup> Standard

**\$449** as low as **\$12/mo.**, (46 pmts.<sup>29</sup>)  
E-VALUE Code: **20449-S10104**

Solutions that fit. Easy as **DELL**

Click **www.dell.com/bizsolutions** Call **1-800-545-9674**

order exceeds \$25K, a Dell Financial Services rep will contact you to process your documentation. Taxes, fees and shipping charges are extra and may vary. Not valid on past orders or financing. QuickLoan arranged by CIT Bank to Small Business customers with approved credit. 28-term indicates compliance with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1GB/sec. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required. <sup>29</sup>Technician replacement part or unit (depending on service contract) will be dispatched, if necessary, following phone-based troubleshooting in advance of receipt of returned defective unit. Service may be provided by third-party provider. Subject to parts availability, geographical restrictions and terms of service contract. Service timing dependent upon time of day call placed to Dell. Defective unit must be returned. Replacements may be refurbished. U.S. only. Dell, the stylized E logo, E-Value, PowerEdge, PowerConnect and PowerVault are trademarks of Dell Inc. Intel, Intel Inside, the Intel Inside logo, Intel Xeon, the Intel Xeon logo, Pentium and Celeron are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. ©2004 Dell Inc. All rights reserved.

**GO**  
Online For  
Latest Prices  
and Weekly  
Promotions



## BRIEFS

## IBM Says It Will Add 15,000 Jobs

IBM, which has made a series of small layoffs since last September, said it plans to add 15,000 jobs worldwide this year – a move that would increase its workforce by 5%. About 4,500 of the new jobs will be based in the U.S., an IBM spokeswoman said. The company also plans to spend \$200 million to train up to 100,000 workers in hot IT skills, such as Linux and Web services.

## Dell Warns About Defect in Server

Dell Inc. warned that its PowerEdge 1650 server can overheat, emit smoke and shut down because of a defective component. Dell said it will replace the motherboards on all 1650s sold between last January and early May. The 1650, a rack-mounted server for use in data centers, was dropped in mid-2003 after Dell introduced a system called the 1750.

## Siebel Buys Maker Of Call Center Apps

Siebel Systems Inc. has agreed to buy Ineto Services Inc., a developer of hosted call center applications, for up to \$5 million in cash. This would be Siebel's second acquisition of a hosted CRM software vendor in three months; the company bought UpShot Corp. in November. Siebel also reported a \$41.5 million profit on revenue of \$366.7 million for last year's fourth quarter.

## Sun Nabs Content Switch Vendor

Sun Microsystems Inc. said it will acquire Nauticus Networks Inc., a vendor of content switches designed for use with Web-based applications. Financial terms weren't disclosed. Sun said it plans to integrate Nauticus' technology with its line of blade servers.

MARK HALL ■ ON THE MARK

## Spam-Detection Tech Reaches Its Limits ...

... so IT managers need to shift their spam-fighting strategies, claims Paul Judge, chief technology officer at CipherTrust Inc. in Alpharetta, Ga. "With spam no longer being a small percentage of messages and now being the majority of e-mail, we need to fight the problem the other way around," he suggests. In short, identify the good messages and let them through, and chuck everything else. That's part of the logic

behind the company's IronMail 4.0 appliance, which is being released today. CipherTrust has boosted the power of its Enterprise Spam Profiler (ESP) tool in IronMail to more accurately distinguish good messages from bad ones. Geoff Catron, director of networks/security for the Georgia Department of Technical and Adult Education, manages the messaging on 34 campuses and a central office, each of which uses an IronMail 3.0 appliance. He's looking forward to 4.0 because of the improvements in ESP. Catron says the central office alone gets 12,000 messages a day, and 92% are spam. Getting to that good 8% takes some diligent tuning of the ESP, he says. At the central office, where one of Catron's engineers regularly tunes the filtering parameters, that's not a big deal. But separating the wheat from the spammy chaff is more problematic on the campuses, where staff have different skill levels and face differ-

ent day-to-day challenges. But with 4.0, CipherTrust will take over tuning the ESP to locate good mail and regularly download updates to user appliances with improved processing techniques. IronMail 4.0 also adds Bayesian and URL filtering. Pricing starts at \$27,000. ■ Phil Raymond agrees with Judge that traditional spam filters are imperfect. "We know the perfect filter is the pocketbook of the spammer," says the CEO of Van-

quish Inc. in Marlboro, Mass. Raymond anticipates that Vanquish will later this year unveil a new antispam system that's driven by economics. He says the planned service and software offering, while complex, will let legitimate bulk e-mailers offer users a financial incentive to reject unwanted messages. The legit crowd, such as newsletter publishers, will put up a bond for each mailing and bet that very few recipients will reject them. However, if you do get an un-

wanted message, you can reject it with a button that's attached to each e-mail and, say, pocket a buck in a PayPal account. Under this scheme, a tally is kept of every time you reject an e-mail (and pocket the money) so that other mailers can determine your sensitivity to unsolicited messages and drop you from their lists. Raymond hopes that over time, legitimate bulk mailers will embrace a system like this so completely that any bulk e-mail from an unknown source will automatically be rejected by all mail systems.

■ When you're done fighting spam (yeah, right), you can return to securing your data, which is most at risk from internal malcontents. That's the logic behind OmniTrust Security Systems Inc.'s Trusted Environment. It lets you set policies dictating who can see what documents when, based on where they are and what device they're using. Michael Mansouri, CEO of the Mountain View, Calif., company, which is changing its name from Probox Inc. tomorrow, says you can have policies for remote laptops and handhelds that are different from those for desktop PCs.

■ Are your users having trouble managing their passwords? According to Greg Fournier, product line manager at American Power Conversion Corp. in West Kingston, R.I., the average employee has about 17 of them. And help desk experts say the No. 1 request from callers is for assistance with forgotten passwords. Biometric devices can consolidate your passwords and add security to a PC. But they're pretty pricey. Or have been. In early March, APC will release its Biometric Manager for under \$50. It will remember all of your passwords (except for the one to its master file of encrypted passwords) and apply them to the right applications. Right now, it's Windows only, but you second-class Macintosh citizens will get a version later in the year. ☎ 44233

## Rich Internet Apps

Laszlo Systems Inc. in San Francisco this week will release Laszlo Presentation Server 2.0 with its new Krunk Optimizer. The upgrade is ideal for online, transaction-based programs. It combines Macromedia Flash and XML to deliver interactive, high-performance applications. It's free for developers at [www.lazlosystems.com/developers](http://www.lazlosystems.com/developers). Enterprises deploying it will fork over \$22,500 per server CPU.

## ERP Vendors 'Earning Little Loyalty'

BY MARC L. SONGINI

Vendors of ERP software are apparently making little progress in differentiating their brands, according to a recent survey by The Yankee Group.

Users who were asked to evaluate major ERP vendors such as Oracle Corp., SAP AG, IBM and PeopleSoft Inc. said they find them to be more alike than different, said Jon Derome, an analyst at the Boston-based research firm. That means repeat business is key to success in the ERP mar-

ketplace, and upselling to one's installed base will be crucial to vendor survival, he said.

The Yankee Group, which funded the research itself, surveyed 350 executives in companies that run software from various ERP vendors and found that respondents were most likely to implement or recommend Oracle software. Oracle won plaudits from 32% of those surveyed. PeopleSoft was touted by 29% of the respondents, and SAP was backed by 26%. J.D. Edwards &

Co., Microsoft Great Plains and IBM were each cited by 14%. IBM was cited strictly on the strength of its name; IBM is not an ERP vendor.

Those numbers are all well below the 50% level that would be considered a healthy rating, said Derome.

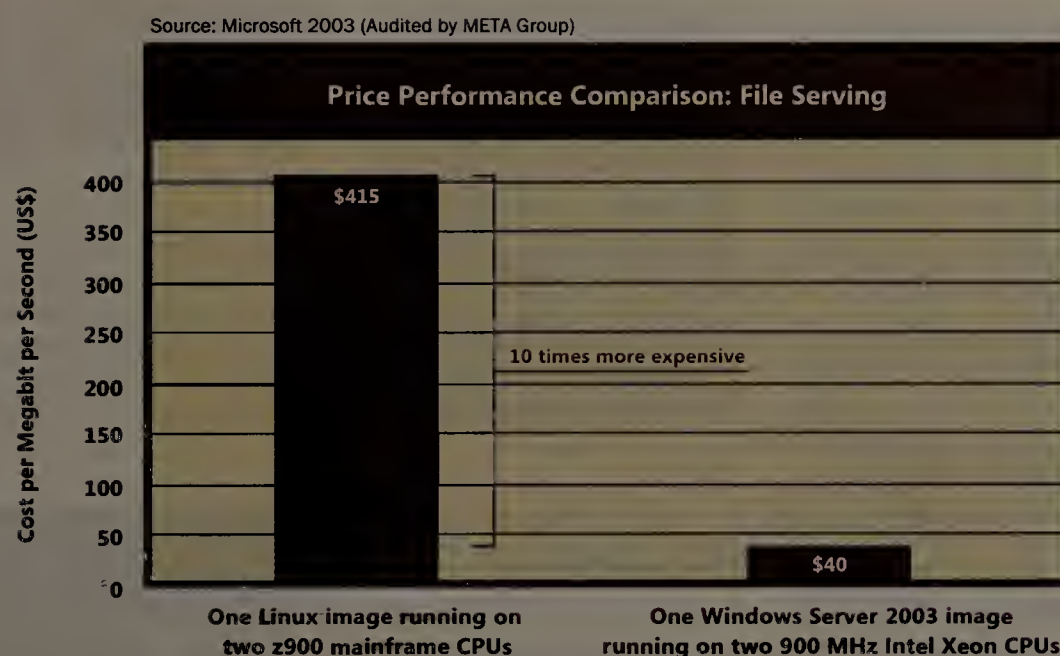
One user offered his own critique. John Schindler, CIO at lighting fixtures maker The L.D. Kichler Co. in Cleveland, said companies generally have too much vested in their ERP systems to scrap an installa-

tion even if they wanted to. While some ERP vendors might have an edge in a specific industry, their overall performance is about the same, said Schindler, whose company uses PeopleSoft software.

And support is handled poorly by companies across the board, added Schindler, a former Oracle user. "It's a license to steal, and the dollar amounts are reaching levels that are not justified," he said. "All the majors use some sort of percentage increase annually, which builds over time to an annuity that is just out of line." ☎ 44275



# WEIGHING THE COST OF LINUX VS. WINDOWS? LET'S REVIEW THE FACTS.



Linux was found to be over 10 times more expensive than Windows Server™ 2003 in a recent study. The study, audited by leading independent research analyst META Group, measured costs of Linux running on IBM's z900 mainframe for Windows-comparable functions of file serving and Web serving. The results showed that IBM z900 mainframe running Linux is much less capable and vastly more expensive than Windows Server 2003 as a platform for server consolidation. To get the full study and other third-party findings, visit [microsoft.com/getthefacts](http://microsoft.com/getthefacts)



# Bank Group Offers Guidelines On Outsourcing Security Risks

Publishes 33-page spreadsheet to help gauge if vendors can protect IT systems

BY LUCAS MEARIAN

A CONSORTIUM of the country's top financial services firms last week published a set of industry guidelines to use in evaluating the security risks of IT outsourcing deals.

The Banking Industry Technology Secretariat (BITS) in Washington released the security guidelines as an addendum to an existing framework for managing business relationships with IT services

providers. The group's goal is to help financial services firms streamline the outsourcing evaluation process and better manage the risks of handing over control of key corporate systems to vendors.

The guidelines are based on the International Standards Organization's ISO 17799 code of practice for information security management, which covers categories such as documenting corporate security policies and classifying assets.

They also include best practices gathered from BITS members and input from vendors, government agencies and third-party IT auditors, said Faith Boettger, a senior consultant at BITS.

Bob Cedergren, second vice president of information security and business continuity planning at Fortis Inc., a financial services firm with U.S. operations in New York, said security concerns related to outsourcing are getting more attention in corporate boardrooms. "Each time there's a virus outbreak, this gets discussion within our CIO group here at Fortis as well as with the CEOs" of individual business units, Cedergren said.

The BITS guidelines, which are built into a 33-page spreadsheet, provide a single set of rules for evaluating outsourcing and IT services vendors, Cedergren said. He noted that in the past, each of Fortis' operating units had its own vendor evaluation procedures. "This puts it down on paper

## What to Ask

**BITS recommends that IT managers consider the following security-related outsourcing issues:**

- Do IT services firms have appropriate security policies and management procedures in place?
- Have they monitored systems for maintaining an accurate inventory of IT assets?
- Are outsourcing work areas a business partners qualified to fulfill their responsibilities?
- Are data centers physically protected against access by unauthorized individuals?
- Have they implemented policies for controlling data access, including data backup?

companies have been looking for in a best-practices matrix, according to Boettger. "Financial institutions were deploying their own internal resources or engaging third parties to perform due diligence and ongoing reviews to close that gap in the assessment requirement," she said.

With the added security guidelines, BITS's framework now includes questions to ask IT services vendors during each stage of the outsourcing process, including risk management, planning, testing and governance, Boettger said. The framework was originally published in 2001 and was updated by BITS last November.

One key area that wasn't covered in earlier guidelines was business continuity, which now falls under the umbrella of information security at Fortis because of terrorist attacks around the world and last August's blackout in parts of the northeastern U.S. and Canada, Cedergren said.

He added that Fortis' IT department takes time to understand the security procedures of service providers and then writes into any outsourcing contracts provisions that allow audits and on-site reviews as needed. **■ 44249**

## Retaining the Crown Jewels

Some work can't be moved overseas, or even out of the company, because it's too specialized. That was the case at TWI Interactive Inc., the Boston-based digital media arm of global sports and entertainment marketing firm IMG.

Last year, TWI set out to increase the efficiency of its IT operations and cut costs while retaining ownership of its crown jewels: business knowledge about sports.

In April TWI signed a deal with SevenSpace Inc., an Ashburn, Va.-based firm that specializes in managing only certain parts of a company's IT operations so the client can retain the processes it believes it can do better than any service provider.

John Watson, vice president of business development and head of the IT division at TWI Interactive, said he expects about \$2 million in savings over three years as a result of reduced IT labor and systems spending. SevenSpace is doing the work in the U.S., something Watson wanted so he could maintain a close relationship with the service provider. He said TWI eliminated 21 IT jobs, but about half of those

workers moved to SevenSpace.

Watson said TWI is retaining all application and content development because the developers must have expertise in sports. "That's the thing we understand and know how to do," he said.

Many companies, however, do choose to outsource application development to service providers with specialized business knowledge, including some that are offshore. David Tapper, an analyst at research firm IDC in Framingham, Mass., said that if prospective outsourcers claim to have specialized business expertise, a company considering its services should ask for customer references and speak to the outsourcer's users for verification.

While SevenSpace currently provides IT infrastructure services in the U.S., the company is exploring the use of offshore resources. CEO Peter Weber said that he considers offshore operational management capabilities to be immature but that in the next six months, his firm will conduct live tests of offshore operations.

—Patrick Thibodeau

## Continued from page 1 Offshoring

tied to it [who] has seen to it that it falls off the rails."

Internal opposition is "one of the top reasons why projects don't go through," echoed Cliff Justice, managing director at NeoIT.com Inc., a San Ramon, Calif.-based offshore consultancy.

Advice for dealing with internal resistance, offered at a Strategic Research Institute LP conference here last week, includes ensuring strong support from upper management, picking the right people to head the effort and getting managers involved early in the process.

"Choose the business unit manager who is going to be

Continued on page 11



NEW YORK PROTESTERS voice their disapproval about offshore outsourcing.



# Parametric Tries to Simplify Its Product Management Applications

## Windchill upgrade adds integrated collaboration, data control capabilities

BY JAIKUMAR VIJAYAN

Though software vendors tout the use of product life-cycle management tools as a way to improve manufacturing efficiencies, many companies are continuing to drag their feet when it comes to adopting PLM products.

Some vendors have responded by trying to make their software easier to use and integrate with other corporate applications. Parametric Technology Corp.'s introduction last week of an upgrade of its Windchill PLM suite is a case in point.

Waltham, Mass.-based PTC said the software was completely redesigned as part of its Windchill 7.0 upgrade. New features include integrated end-user collaboration and data control capabilities, plus hooks for tying PLM data to applica-

tions such as ERP and supply chain management systems.

Improved data visualization, support for J2EE and Web services technologies, and PDF-based document collaboration capabilities are also being added, according to PTC. The upgrade is aimed at "reducing complexity and risk" for users of the software, said Jim Heppelmann, an executive vice president at the company.

### Seeking Clarity

Ping Inc., a Phoenix-based maker of sporting equipment that uses PTC's software, is evaluating Windchill 7.0 for a possible upgrade later this year. Of particular interest is the integration of Windchill's PDMLink product data management tool and ProjectLink collaboration module, said Dan Shoenhair, an engineering director at Ping.

Melding the two functions would make it easier and faster for Ping's engineers, designers, purchasing agents and other employees to share product data, Shoenhair said. Current-

ly, Ping uses separate servers and databases to manage product data and support collaboration among end users.

The integration in Windchill 7.0 "simplifies things and lends more clarity to what you're doing," Shoenhair said. End users should also be able to modify product data and track changes made by other workers more easily than they can now, he added.

PTC's Enterprise Systems Integration module for tying PLM data to other applications is another key new feature in Windchill 7.0, said Gisela Wilson, an analyst at

### NEW SOFTWARE

## Windchill 7.0

■ Combines PTC's ProjectLink and PDMLink technologies to provide integrated support for collaboration and data management.

■ Includes an Enterprise Systems Integration module that supports ties to other products, like SAP applications.

Framingham, Mass.-based research firm IDC.

PTC worked with Tibco Software Inc. to develop connectors between Windchill and SAP's ERP applications. Wilson said the links will support a bidirectional flow of data between the applications, allowing for even wider collaboration on product development and other activities.

For instance, engineering or product design changes could be more easily communicated to supply chain and procurement systems, Shoenhair said. But he noted that Ping has no immediate plans to use the SAP integration functionality.

PTC will build a similar bridge between Windchill and Oracle Corp.'s business applications and then do the same with PeopleSoft Inc.'s software, Heppelmann said. But he didn't disclose a development schedule.

Improved integration is needed to boost the adoption of PLM software, said Bruce Hudson, an analyst at Meta Group Inc. "Integration is an ugly secret of PLM," Hudson said. "It's the one area where PLM vendors do the least due diligence." **44262**

*Continued from page 10*  
most enthusiastic, and basically have a manager who won't sabotage the process," said Amrita Joshi, a vice president who has managed business process outsourcing projects at IndyMac Bank in Pasadena, Calif.

"If anyone... wants to blackball the project, it's going to be blackballed. So you have to build consensus," said Paul Fielding, a vice president who heads outsourcing efforts at J.P. Morgan Chase & Co. in New York.

No one is saying that getting internal support is easy. Offshoring of white- and blue-collar jobs to low-wage countries is an emotionally and politically charged topic. Opponents, including laid-off IT workers, have succeeded in getting bills introduced in Congress that would set re-

strictions on visas for foreign workers.

Outside the hotel where the conference was held, a group of about 30 protesters braved the cold to hold "Buy American" signs. Conference attendees were advised to remove their name tags when leaving the building, but the protesters, including John Bauman, a long-time IT worker at a Connecticut utility who said he lost his job because of cutbacks unrelated to offshoring, were peaceful. Bauman, who has been out of work for 15 months, said he hasn't found work because many employers in the state are moving jobs overseas.

"Offshoring will probably never stop," said Bauman, who serves as president of The Organization for the Rights of American Workers Inc. in Meriden, Conn. "Whenever a

company can find a way to save money, they'll do it."

Bauman and other protesters said they're hoping that political lobbying and economic pressure, such as refusing to give their business to companies that outsource offshore, will become effective deterrents.

### Potential Consequences

The political and social ramifications of offshoring are in fact making some firms disinclined to move work out of the country, some conference attendees said. Quantifying that is difficult, however.


Pfeiffer, who is now CEO of Ambertek Group, a Darien, Conn.-based consulting company, said offshoring is here to stay. "Despite the political rhetoric... this is going to continue to move forward," he

said, adding that managers have to come to grips with changing responsibilities. "You have to think of your job as a global job."

Offshore work doesn't always lead to reductions in a U.S. company's workforce. That has been the experience of J.P. Morgan Chase, according to Fielding. He said the company has recently seen a net increase in IT jobs, but in areas such as architecture design and development, which require higher levels of expertise than the development work it sends offshore. "It's a definite growth" in IT positions overall, he said. **44256**

### MORE ONLINE

For additional coverage of outsourcing issues, visit our Web site:

 **QuickLink a2290**  
[www.computerworld.com](http://www.computerworld.com)

## IBM Entices Windows NT Users to Linux

BY SCARLET PRUITT

IBM is readying a program to push its enterprise software running on Linux as an alternative to Microsoft Corp. software running on the soon-to-be-discontinued Windows NT operating system.

The program, announced last week, offers free migration classes and some discounts on software and services for users moving to IBM software running on Linux.

Microsoft will discontinue support and security patches for Windows NT at the end of this year, requiring nearly 2 million customers to develop a migration strategy, IBM said.

IBM's classes will be offered worldwide and will cover migration to the company's hardware and software for needs such as database management, collaboration, security, systems and network management, Web and application serving, and file and print serving.

IBM is also offering discounts on Lotus Domino running on Linux for any IBM eServer, including its zSeries mainframe, to customers moving from Windows applications like Microsoft Exchange.

Special programs are also being offered for migration from Microsoft SQL Server to DB2 Universal Database on Linux and for security and network management migrations.

IBM's timing is good, said James Governor, principal analyst at Bath, Maine-based RedMonk LLC. "Users are definitely looking at Linux to reduce their total cost of ownership around Windows, and at the same time IBM is savvy to the fact that it can make extra money on pieces of software and services," he said.

Microsoft officials weren't available for comment.

*Pruitt writes for the IDG News Service.*



# Health Care Firms Turn to Blades to Meet Privacy Rules

Centralized technology helps secure patient data, eases systems management

BY BOB BREWIN

**T**WO HEALTH CARE companies are relying on blade computing technology to help them comply with the patient data privacy rules imposed by the federal Health Insurance Portability and Accountability Act (HIPAA).

Beverly Enterprises Inc., a Fort Smith, Ark.-based nursing home operator, last week said it's using Citrix Systems Inc.'s MetaFrame Access Suite software running on blade servers made by Hewlett-Packard Co. to provide its 57,000 nurses, clinicians and other employees with access to clinical and

patient billing applications.

Beverly expects to save millions of dollars in IT costs by consolidating its application infrastructure on about 30 two-processor HP ProLiant blade servers, which are installed at the company's data center in Fort Smith.

The new architecture also provides "a very locked-down environment" that's aimed at meeting HIPAA's privacy requirements, said David Valcik, vice president of technical services at Beverly.

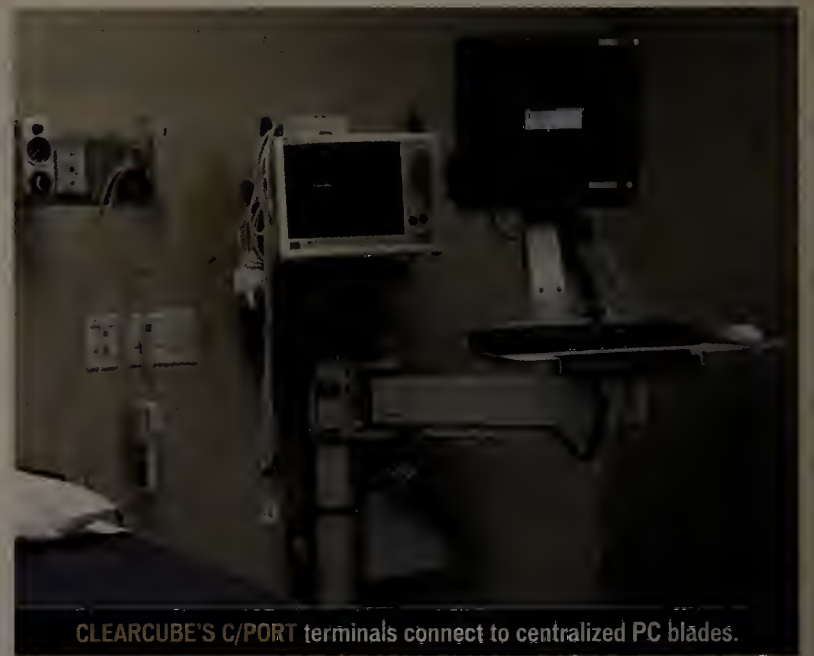
Oklahoma Heart Hospital announced earlier this month that it's using blade systems as part of its HIPAA compliance

strategy. In a project that started early last year, the Oklahoma City-based cardiac care facility installed about 120 PC blade devices made by Austin-based ClearCube Technology Inc., said Jeff Jones, leader of the hospital's MIS team.

## Safeguarding Data

Jones said ClearCube's technology lets Oklahoma Heart put "dumb" terminals in patient rooms and connect them to PC blades that are installed in a secure computer room. The setup ensures that a PC containing medical records and other personal data about patients "does not walk out the door," he noted.

In addition, ClearCube's C/Port terminals don't have fans that could spread air-



CLEARCUBE'S C/PORT terminals connect to centralized PC blades.

borne contaminants. That was another key factor in Oklahoma Heart's decision to use the PC blades, according to Jones. He declined to say how much the project cost the hospital, which is also using the terminals in its operating rooms.

Rob Enderle, an analyst at

Enderle Group in San Jose, said the health care industry as a whole appears to be moving toward an IT architecture based on centralized servers and thin clients. The main goals are to ensure the security of patient records and simplify systems management, Enderle said.

Valcik wouldn't disclose cost or return-on-investment figures for Beverly's Citrix and blade server installation. But he said the company would have had to buy new PCs and servers for its 400 or so elder care facilities if it hadn't invested in the blade technology. The centralized system has also reduced the time required to run patient reports from six hours to 15 minutes, he noted.

In addition, Beverly used the system to remotely provision Citrix's software during the installation process, said Don Griffin, the health care company's director of infrastructure research and development. He added that software installations were done by "a flip of a switch" as Beverly rolled out Citrix's technology to about four facilities and 150 to 200 end users per week after launching a pilot project early last year.

At Oklahoma Heart, ClearCube's terminals provide doctors with easy access to electronic medical records, pharmacy systems and other applications, Jones said. He added that the terminals can also be used to call up images such as X-rays. **44265**

# Cisco Tailors Switches for Metro Ethernet Networks

Devices include quality-of-service support, redundant power supplies

BY MATT HAMBLIN

Cisco Systems Inc. last week announced a pair of switches that support Ethernet-based metropolitan-area networks and are aimed at network service providers looking to offer new capabilities to their business customers.

The Catalyst 3750 Metro Series switches have more intelligence than Cisco's existing devices and include the ability to provide quality-of-service guarantees to users, said Wesley Mukai, a product manager at the vendor. That means the switches can do things such as segment data traffic and give voice-over-IP transmissions higher priority than data transfers, he added.

The new products, which

are specialized versions of Cisco's enterprise-class Catalyst 3750 switch line, also include redundant power supplies. Service providers can buy the switches and install them at their customers' facilities, Mukai said.

Song Networks Holding AB, a Stockholm-based company that provides voice, data and Internet services to business customers in Scandinavian countries, is testing a 3750 Metro switch. Based on several days of tests, the switch "would fit in very well with our MPLS core network," said Song senior engineer Anders Thorzen, referring to Multiprotocol Label Switching technology.

Thorzen said Song is building metro Ethernet LANs and wants to support Internet services as well as virtual private networks based on either IP or Ethernet within a single switch, which would be possible with the 3750 Metro.

But cost could be an issue,

said Thorzen, who said he did not know the price of the new switch until he started testing it. "The price is quite high, so I can't say if we'd buy them," he said, noting that Song would need to purchase the basic box as well as an advanced IP features license for a total cost of nearly \$20,000 per switch. "I'll

## PRODUCT DETAILS

### Catalyst 3750 Metro Series

■ Includes two rack-mounted models, one that runs on AC power and one that's DC-powered

■ Offers 24 10/100 Ethernet ports, plus two small ports for Gigabit Ethernet access and two more for enhanced network services

■ Supports maximum forwarding bandwidth of 32Gbit/sec. in Layer 2 and 3 switching fabrics

PRICING: Starts at \$6,995 for the AC model and \$7,995 for the DC version

AVAILABILITY: Q2 for release by month's end

have to talk to the Cisco sales rep about possibly getting a lower price," Thorzen said.

Cisco already dominates the metro Ethernet switching market "by far," said IDC analyst Sterling Perrin, although he declined to disclose market share data. But the 3750 Metro switches should further enhance Cisco's competitive standing against rivals like Nortel Networks Ltd., Foundry Networks Inc. and Extreme Networks Inc., Perrin said.

The new line adds more robust quality-of-service and reliability features to the mainstream Catalyst 3750 switches and is being offered as part of Cisco's strategy to sell more products to service providers, according to Perrin.

Having first emerged in 2001, metro Ethernet technology has caught on mainly because it lets customers buy VoIP and other data services at a lower cost than leasing private lines, he said. IDC predicts that worldwide sales of metro Ethernet equipment will exceed \$2.4 billion this year, up from about \$1.4 billion in 2003. **44226**





SAS, the leader in business intelligence software, challenges...

**Comply with Sarbanes-Oxley now.  
Or prepare for the consequences over time.**

ENTERPRISE INTELLIGENCE

SUPPLIER INTELLIGENCE

ORGANIZATIONAL INTELLIGENCE

CUSTOMER INTELLIGENCE

INTELLIGENCE ARCHITECTURE

With Sarbanes-Oxley compliance deadlines less than a year away, there is an urgency to deliver financial and operational transparency – one clean, consolidated and truthful version of data for all your disclosure controls and procedures. SAS® Corporate Compliance software provides auditable, searchable process and document control solutions. So you can prepare now, while creating a system that won't be outdated when the next new legislation is enacted. Our intuitive interfaces are designed for users of any skill level – with a central point of control to manage across all environments – and an open, adaptable architecture. To find out more about how to confidently comply with Sarbanes-Oxley, including Section 404, call us toll free at 1 866 270 5729 or visit our Web site.

**[www.sas.com/sox](http://www.sas.com/sox)**

*The Power to Know.*





## BRIEFS

## PeopleSoft Drops Third-Party Tools

PeopleSoft Inc. said it's switching from Informatica Corp. to Ascential Software Corp. as the supplier of the data extract, transform and load tools bundled with its analytic applications. But the change to Ascential's software will be transparent to users, PeopleSoft added. It said existing customers can continue to use the tools developed by Informatica.

## CA Reports Profit On Increased Sales

Computer Associates International Inc. reported a \$22 million profit for its third quarter, which ended Dec. 31. Revenue rose 12% year over year, and CEO Sanjay Kumar said he is "encouraged by signs that technology spending is gradually increasing."

## BY THE NUMBERS

REVENUE		PROFIT
Q3 FY04	\$844M	\$22M
Q3 FY03	\$754M	(\$44M)

## PalmOne Lays Off 12% of Its Workers

PalmOne Inc. announced a layoff of about 100 employees, reducing its workforce by 12% and leaving the Milpitas, Calif.-based maker of handheld devices with a total of 740 workers. Two engineering teams that develop wireless and handheld products bore the brunt of the job cuts after they were consolidated into a single group, according to PalmOne.

## Short Takes

SAP AG said revenue fell by 3% in last year's fourth quarter, as forecast. But the company added that it expects software license sales to increase by about 10% this year. . . . EMC CORP. reported a fourth-quarter profit of \$220 million and said the U.S. DEPARTMENT OF DEFENSE plans to buy \$44.3 million worth of its storage hardware and software.

Continued from page 1

## LinuxWorld

won't offer any such program because it doesn't believe indemnification is needed (see story below).

Users were less certain.

Rudy Ebisch, assistant technical support director for core systems in the IT division of Canon USA Inc. in Lake Success, N.Y., said legal concerns are definitely a factor as his company eyes Linux as a possible alternative in a migration from multiple operating systems.

"That's the No. 1 question my general manager asked when I was coming here," Ebisch said. So far, Canon is trying out Linux only for projects such as experiments with network monitoring tools. But as major vendors, including Hewlett-Packard Co., Novell Inc. and Oracle Corp., adopt Linux strategies, Canon's options continue to expand.

"It makes it legitimate," Ebisch said. "I'm not taking the risk I would have a year ago" by moving to Linux.

Richard Teasdale, a Unix administrator at a U.S.-based insurance company that he declined to name, said indemnification programs "make it more palatable" to consider Linux. But he said that's just one of many issues that must be considered.

"I don't think it's a make-or-break issue," Teasdale said. "We're looking at it. We're under tremendous pressure to reduce costs, so we're looking at every way . . . and Linux is one of them."

## Conservative Pace

Colt Jackson, a systems engineer at CareFirst Inc., an Owings Mills, Md.-based health insurance company, said IT planning in the insurance industry moves at a conservative pace. As a result, indemnification programs are helpful but won't likely trigger a mass migration.

Health insurance companies "want to have a track record for technologies they put in place, but they don't want to

create that track record themselves," Jackson said. "They definitely want to limit risks."

Another user, an enterprise architect at an East Coast financial services company who asked to remain anonymous, said indemnification is indeed meaningful.

"It actually is something we were really concerned about. We were in the process of putting together a position paper on Linux when the [SCO] lawsuit hit, and we put it on hold," he said. "But to have companies step to the plate and say they're having indemnification programs meant they were acknowledging and dealing with the problem."

## Unanswered Questions

Questions remain, however. "We're not coming away from this with any big reasons not to [move to Linux]," said the enterprise architect. But because it will likely take years

**[Whether there's a legal liability problem] is the No. 1 question my general manager asked when I was coming here.**

.....  
RUDY EBISCH, CANON USA

for the legal issues to be resolved, "it's important for the companies that believe in their [Linux] products to back them up with indemnification," he added.

Alex Drought, head of technology for movie editing workers at Blue Sky Studios Inc. in White Plains, N.Y., a unit of Fox Filmed Entertainment, said indemnification means little in his business, since film studios can quickly turn to other operating systems like Apple Computer Inc.'s Mac OS X in the

event of legal problems such as the SCO lawsuit.

That's different from the situation at financial services and insurance companies, where a quick change isn't possible because of the depth of their IT integration and architectures, Drought said. "They cannot turn on a dime if things change overnight," he said. "They would really be in a tough position."

Red Hat Inc. last week said it will offer a plan that it calls the Open Source Assurance Program to protect all existing and future Red Hat Enterprise Linux customers from legal challenges as long as they're using the software [QuickLink 44168].

Red Hat's move came on the heels of a decision a week earlier by Novell to indemnify SUSE Linux AG customers against possible legal action from SCO [QuickLink 44020].

☎ 44259

## Defiant IBM Calls Linux Indemnification Unnecessary

## Open-source OS use continues to grow, despite legal threats by SCO

BY TODD R. WEISS  
NEW YORK

While Novell, Sun Microsystems, Hewlett-Packard and Red Hat are all offering indemnification programs to protect customers from possible legal threats stemming from their use of Linux, IBM has quietly remained on the sidelines.

But on the opening day of the LinuxWorld Conference & Expo here last week, IBM publicly weighed in on the issue, arguing that there's no need for it to indemnify its growing pool of Linux customers. IBM's rationale: The ongoing \$3 billion lawsuit filed against it last March by The SCO Group is baseless.

"Our position hasn't changed," said Jim Stallings,

IBM's general manager for Linux. "The claims that have been alleged [by SCO] against IBM [have] no basis," so indemnification is not needed.

Even if customers still have concerns, both major Linux distributions — SUSE Linux and Red Hat Enterprise Linux — include customer protection programs to help defend users against legal actions from SCO, Stallings said. In addition, the Open Source Development Labs (OSDL), a nonprofit enterprise Linux advocacy group, has begun a defense fund that it hopes will bring in \$10 million for users entangled in any related legal fights.

Use of the operating system among businesses has continued to grow, despite SCO's recent threats that it could soon begin suing enterprise Linux users, Stallings said. "They voted," he said of customers who have deployed Linux. "Given what's there, customers have made up their

minds by the thousands" and don't feel threatened by SCO's legal challenge.

Matt Plociak, an analyst at Progressive Strategies Inc. in New York, said IBM's argument makes sense.

"To me, if you offer indemnification, you're saying there may be a problem," he said. "IBM is saying there is no problem and [that they're] going to prove that in court. I think that's a reasonable strategy, and obviously their customers are confident with that" because they haven't stopped buying and using Linux.

Al Gillen, an analyst at Framingham, Mass.-based IDC, said that while IBM continues to pass on indemnification, the company has donated money to the legal defense fund created by the Beaverton, Ore.-based OSDL. "I don't think there's any real need to provide any indemnification until they have a customer who's in some form of litigation" in connection with SCO's claims, Gillen said. "Then the pressure would increase for them to do something." ☎ 44260





The reliability makes it easy to own; the price makes it easy to buy.

The new HP ProLiant DL140, powered by the Intel® Xeon™ processor, delivers the expandable performance your workload demands. Now you can get the ProLiant reliability you expect at a price you might not—and, through January 31, you'll get double the memory for free. HP's newest server is designed with the latest industry-standard technologies to keep it affordable, easy to set up, integrate and maintain. The reliable, hardworking DL140 helps you spend more time focusing on your business and less time serving your server. Demand more of what you need. Demand a server that's powerfully simple and HP dependable. Demand it for less from HP.



HP PROLIANT DL140  
SERVER  
with Free Double Memory

**\$1,149**

One Intel® Xeon™ processor 2.40GHz  
(upgradable to 2)

1GB SDRAM for the price of 512MB  
(upgradable to 4GB)

80GB ATA Hard Drive\*

Integrated Dual 10/100/1000 NICs

One PCI-X 64-bit/133MHz slot

Standard Quick Deployment Rails

1-Year Limited Global Warranty†



To find out more, visit [www.hp.com/go/hp2](http://www.hp.com/go/hp2) or call 1-888-491-8352.

Offer available when bought direct from HP or from participating authorized resellers. Prices shown are HP direct prices; reseller and retailer prices may vary. Prices shown are subject to change and do not include applicable state and local sales taxes or shipping to recipient's destination. HP is not liable for editorial, pictorial or typographical errors in this advertisement. Photography may not accurately represent exact configurations priced. Offers cannot be combined with any other offer or discount and are good while supplies last. Limited order quantities. Promotions void where prohibited or restricted by law. \*For hard drive, 1GB = 1024 MB. †Custom warranty restrictions and exclusions may apply. For complete warranty details, call 1-800-345-1518 (U.S.). Intel, Intel Inside, the Intel Inside Logo and Intel Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. ©2003 Hewlett-Packard Development Company, L.P.



## Stratus CEO Promises Legacy Upgrade

BY PATRICK THIBODEAU

Stratus Technologies International, a Maynard, Mass.-based maker of fault-tolerant

servers, last week reported a \$3.6 million loss and \$64.6 million in revenue for its third quarter, which ended Nov. 23. It

was the first public earnings report in five years by Stratus, which was split in two in 1999 and then reunited last year.

David Laurello, Stratus' president and CEO, spoke with Computerworld prior to the release of the third-quarter numbers.

**Stratus is a private company. Why are you disclosing your fi-**

**ancial results?** Late last calendar year, we completed a \$170 million bond offering. Bonds are traded in a public market, and you follow a lot of the same financial disclosure rules as a public company.

### Out-of-the-Box Best Practices



### Outside-the-Box Thinking

#### Your Business, Your Way.™

You want to think outside the box.

Your budget calls for "out of the box"

Don't you wish you could have both?

Now more than ever you need to control costs. Software solutions implemented straight out of the box may appear cheaper and faster to implement. The problem is, with rigid applications dictating how you run your business, your teams risk being trapped inside the box.

What if you found Service Management solutions that deliver industry best practices — like ITIL — and also empower you to implement the unique processes that maximize the value of your IT and service support organizations? With Remedy, you have it all.

Remedy's Service Management software solutions, including Help Desk, Customer Support, Asset Management, and Change Management, deliver out of the box, and outside the box—quickly, easily, within your budget.

[www.remedy.com/advantage](http://www.remedy.com/advantage)

or call us at 1 800 442 223



**Remedy**

**What's the future of your Continuum servers?** We continue to sell our legacy line. And the reason we do is because a lot of our applications are very "sticky" to the platform.

In the late 1980s and 1990s, we sold our product to customers that ran their most mission-critical applications on our box. And once it's up and running, our customers tend not to want to change it. If you make an 800 call in the United States, it goes through a Stratus box.

**Will your legacy users be facing an end-of-life scenario at some point?** We continue to upgrade the Continuum platform. For our VOS customers, we're actually taking the operating system and migrating it on to the ftServer, our Windows-based server platform.

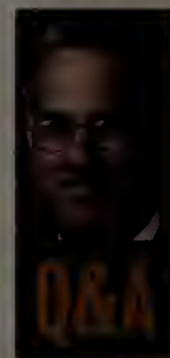
**How important is the ftServer to Stratus?** That's where all our new business is coming from. We started shipping it in June 2001, and since then we've sold it to over 850 new customers. If you look at the five-year period before we introduced ftServer, we were lucky if we had 20 [new] customers.

**What are you doing about Linux?** In June, our plan is to release a Linux [offering] on ftServer. This will primarily be focused on the telco marketplace. In 1998, telco was 50% of our business. Now it's about 25%. With this new Linux ftServer, we're really excited about driving some growth in the telco area. ☎ 44223

#### MORE ONLINE

Read the full interview on our Web site:

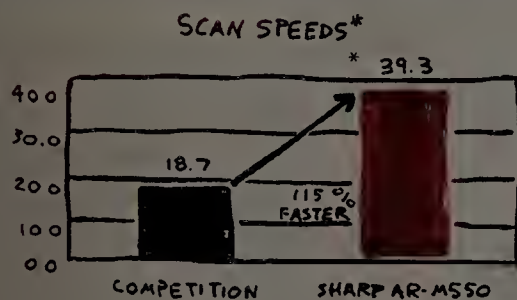
**QuickLink 44224**  
[www.computerworld.com](http://www.computerworld.com)



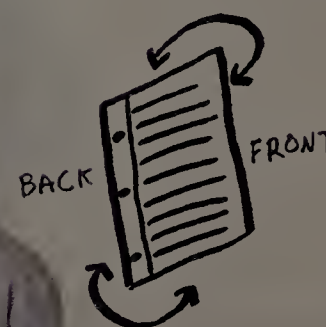
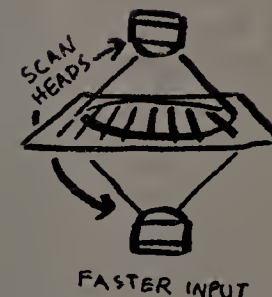


SHARP®


DIGITAL  
IMAGER™



PRODUCTIVITY<sup>2</sup>  
+ RELIABILITY<sup>2</sup>  
SCAN<sup>2</sup>



Double your productivity with Scan<sup>2</sup> technology.

 The best way to stay ahead is to double your productivity. Introducing Scan<sup>2</sup> technology from Sharp. Sharp's Digital Imagers with Scan<sup>2</sup> technology are designed to scan two-sided documents in a single pass.

Now your training manuals and white papers can be scanned, copied, emailed and digitally distributed quicker than ever before.

In fact, it's 115% faster than any other product in its class. Not only is it like having double the help, it will also allow you to accomplish more tasks, in dramatically less time. Together with Sharp's integrated network management software and security features, your digital information is safe and workflow is fully optimized.

Visit [sharpusa.com/scan2](http://sharpusa.com/scan2) or call 1-800-BE-SHARP for more information.

The AR-M550, AR-M620 and AR-M700:

- Operate at 55, 62 and 70 pages-per-minute
- Fully integrated network ready digital copier/printers
- Include network management software and document filing capability

..... be sharp

\* Results of Buyers Laboratory Inc. Document Feeding Speed tests (originals per minute) in 2:2 mode for Sharp AR-M550 vs. the following manufacturers' competitive models: Canon iR 5000 and 5020, HP 9055 MFP, Konica 717, Kyocer Mita KM 500, Ricoh Aficio 100 and 111, and Toshiba e-STUDIO 550. ©2003 Sharp Corporation



MARYFRAN JOHNSON

# Unspeakable Candor

**A**FTER SPEAKING ON A PANEL at a retail conference in New York recently, the CEO of Sears caught all kinds of hell for what amounts to unspeakable candor about offshore outsourcing [QuickLink 44157].

Not only did Alan Lacy talk all too frankly about the financial attractions of going offshore, but he

also doubled his trouble by unfavorably comparing the intellect and drive of American workers with their overseas counterparts. "There are four or five times as many smart, driven people in China than there are in the U.S.," he said.

What the chief executive meant to say, his PR troubleshooters scrambled to explain in their apology afterward, was that countries with populations several times the size of the U.S. naturally have much greater numbers of educated and motivated workers. And like so many other U.S. companies looking to reduce IT costs, Sears is looking to outsource part of its infrastructure this year and is considering all of its options.

What the Sears CEO may have learned last week is that candid, open discussion about offshore outsourcing is the new corporate taboo. Nothing will be more politically incorrect this year than expressing interest in offshoring.

The topic has become a hot button on the national political stage, where the Democratic presidential hopefuls have taken up the cause of unemployed IT workers displaced by outsourcing contracts. Legislation is being proposed in Indiana, Michigan and New Jersey to block state IT contracts from using foreign labor.

Last week, *The Wall Street Journal* published a story about an internal IBM memo that described plans to shift several thousand programming jobs overseas. The article included embarrassing details about a suggested HR script to be used when informing employees that they were out of a

job. And an Associated Press story about an outsourcing conference in New York reported that a consultant from McKinsey & Co. barred reporters from covering his talk, which was called "Is Offshore Outsourcing Unpatriotic?" Some Indian software companies that once publicized their new U.S. customers no longer do so, for fear of adverse publicity.

What is often overlooked in the emotional, angry reactions to offshore outsourcing is how small a percentage it really occupies in the huge global outsourcing market. Analyst firm Datamonitor just released figures showing that offshore contract work made up only 1.4% of the \$119 billion spent on IT services deals in 2003.

Yet despite the chill descending on

public discussion of offshoring, the trend continues to accelerate. Globalization is well under way — and largely enabled by IT, in fact.

The list of big-name companies with established or planned offshore outsourcing projects includes IBM, Hewlett-Packard, Oracle, Time Warner, Disney, Siebel, Microsoft, Yahoo, MasterCard, Google, Accenture, CNN, Target, Bank of America and Intel. More than eight out of 10 software companies will be exporting work offshore this year or next, according to a recent study by research firm Sand Hill Group.

Successful offshore projects can save companies money, but the hidden costs and management pitfalls range from underestimating transition costs and additional travel expenses to security concerns, rising overseas labor costs and IT governance problems.

What troubles me most about the political backlash and the growing self-censorship around this topic is the inevitable stifling effect on honest information exchange. At a time when more companies are gaining experience — both good and bad — with offshore firms and outsourcing contracts, fewer companies are going to be willing to share those experiences.

To me, that's far more unspeakable than the foot-in-mouth candor of the Sears CEO. **44225**



MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at [maryfran.johnson@computerworld.com](mailto:maryfran.johnson@computerworld.com).

PIMM FOX

## Open-Source Model for Outsourcing

**I**T DOESN'T TAKE an MBA to know that you can save money paying a salary of \$20,000 for IT skills in India vs. \$80,000 in Indianapolis. That's why the outsourcing movement now encompasses software creation, not just support and maintenance.

According to a Meta Group study, 41% of all new application development, whether involving Cobol, .Net, C# or C++, is happening offshore. And the Fortune 100 are increasingly dependent on distributed talent. But using offshore programmers requires sophisticated communication and collaboration technology. Without it, the cost of managing outsourced application development can easily strip away any savings you get from salaries.

Unfortunately, such technology is still in its infancy. But there is one tool that suggests how offshore development can be managed: the SourceForge.net Web site. Run by Fremont, Calif.-based VA Software Inc., the site hosts thousands of projects for free, serving as an open-source development platform for project teams as well as a real-time monitor for executives and partners.

Richard Christopher, delivery manager at Allstream Corp. in Calgary, Alberta, uses this repository of open source code and applications as part of his effort to manage integration work for clients in the oil and gas industries. "My role entails ensuring an IT project has the appropriate resources and is delivered on time and on budget," Christopher says.

Using SourceForge.net, Christopher's team manages code, content and process. The tool also handles document management and version control. From his clients' perspective, it's easy to perform acceptance testing, log defects and bugs, and assign priorities tagged with notes. "The nice thing is a





January 2004 • USA

softchoice

# Browser

SMART SOLUTIONS FOR YOUR TECHNOLOGY NEEDS

## Seeing Your Way Through Security Patch Management

Page 10

### Also Inside:

Mobile Security  
IT Asset Management  
Windows Graphics  
Consolidation Solutions

**CHECK OUT**  
AND YOU COULD WIN

**\$1000**





KEEP IT SAFE

4

# Maximum Mobile Security

Even with today's security concerns, hunkering down behind your firewall is hardly the way forward. Not when you can be taking advantage of all the opportunities the open road has to offer. Whether you're looking for mobile security and backup software, or hardware solutions to thwart even the most determined criminals, Softchoice has what you need to conduct business securely no matter where you are. So what are you waiting for? Get out there and share!



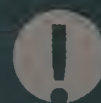
## Effective Backup for Mobile Users



Protecting critical data on users' machines is a challenge for any IT organization. Now available with the new version of VERITAS Backup Exec™ 9.1 for Windows Servers, is the introduction of the Desktop and Laptop Option which delivers effective, high-performance data protection to desktops and laptops for continuous backup protection whether in the office or on the road. By automatically copying user data to existing network share, this new option enables users to restore their own files and maintain synchronization between multiple desktops and laptops. The Desktop and Laptop Option easily integrates into existing IT infrastructure and policies, helping to lower the total cost of ownership. For more information on this new option, go to [www.softchoice.com/browser](http://www.softchoice.com/browser)

### Protect and Charge ALL your Mobile Devices

The NEW APC TravelPower Case is designed to both protect and power your notebook computer, mobile phone AND handheld - all at the same time! The integrated power system helps reduce weight and cord clutter since bulky transformer blocks and power adapters are no longer necessary. TPC1000S \$100.00



### Did You Know? Going Mobile

- By 2006, 40% of all workers will perform a significant part of their job outside of the office.

\*U.S. Census Bureau

- 250,000 mobile devices are left in airports every year.

**DROP BY**  
[WWW.SOFTCHOICE.COM/BROWSER](http://WWW.SOFTCHOICE.COM/BROWSER)  
**FOR A CHANCE TO WIN  
\$1000 BIG ONES**



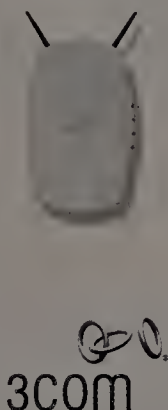


KEEP IT SAFE

5

### Secure Your Wireless Network

The 3Com Wireless LAN Access Point 8250 creates an enterprise-class wireless LAN supporting up to 253 simultaneous users. To protect communications and sensitive data, it offers an advanced and comprehensive set of authentication and encryption capabilities, along with built-in security, manageability and reliability features. Model 8250 \$571.00



### Lock It and Leave It

Deter would-be thieves with the affordable and universal DEFCON VPKL- Video Port Key Lock. Locks onto any notebook computer with a video port and does not require any special base plate or screws. This is one of the toughest and strongest security locking devices out in the market place.

6.5 FT \$25.00



## Protect Your Valuable Data

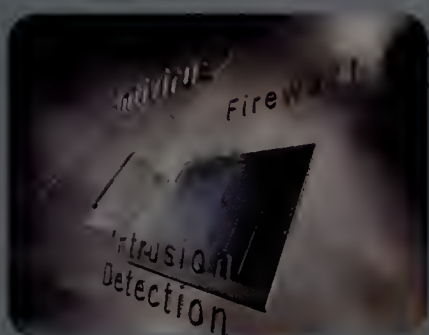
IBM's Embedded Security Subsystem is a unique combination of hardware and software which creates the most secure industry-standard PC. Protect data from unauthorized viewing with easy, automatic file and folder encryption, and use the integrated Password Manager to make remembering multiple passwords easier. This all comes standard on select IBM notebooks and desktops (requires download) and can help you avoid the worry, frustration and cost of unsecured systems.

Pentium M1.3 GHz \$1980.00



### Memory is Key

Use Kingston's Hi-Speed DataTraveler 2.0 USB memory key for fast, powerful and secure data transfers for critical information. And with their TravelerSafe software, your data is now password protected. Available in 128, 256, 512 and 1GB. 128MB \$64.00



## Symantec Client Security: All in One

Are you worrying about vulnerable remote laptops outside your perimeter? Are you concerned about the next time a client unknowingly downloads a virus and then logs back in? Put these fears to rest, once and for all.

The beauty of Symantec's new integrated client security solution is that it delivers protection for network and remote clients alike - all managed from a single console. Symantec™ Client Security is the first integrated, easily managed protection for your client workstations, laptops and remote users. It offers industry leading security technologies -intrusion detection, client firewall and virus protection -in one integrated, manageable solution.

Learn more at [www.softchoice.com/browser](http://www.softchoice.com/browser) 5 User CD-Rom \$470.00

1.877.967.3737

softchoice





# Inspect the Uninspected

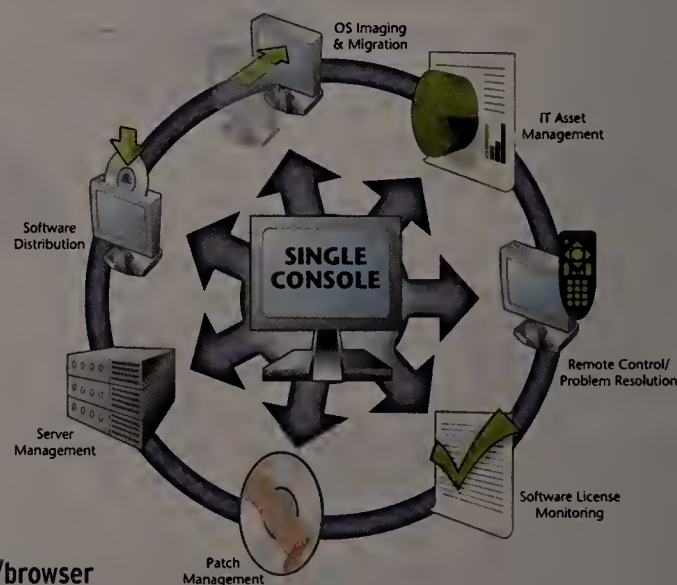
6

Analyzing your environment's attributes and activity can help you build a clearer, more productive IT future. Having easy access to inventory data on the software and hardware running on your network, along with detailed reports on bandwidth and application usage are keys to successful and cost-efficient IT decisions. These solutions can help you reduce IT expenditures, enhance security and performance, and make change management a veritable walk in the park.

## Control Your Machines

LANDesk® Management Suite 8 enables IT professionals to automate systems management tasks and proactively control desktops, servers and mobile devices — all from a single console.

- Automatically discover technology assets
- Migrate users to new operating systems
- Decrease software licensing costs
- Keep up with security updates
- Install software on the desktop
- Reduce the cost of helpdesk support



To learn more about Management Suite 8, visit [www.softchoice.com/browser](http://www.softchoice.com/browser)



### Did You Know? Savings Potential

Implementing IT life cycle asset management will create a reduction in costs of up to 30% per asset during the first year.

Continuing will yield an additional reduction of 5% to 10% per asset through 2006.

\*Source: Gartner

### Complete View of IT Assets

Express Software Manager from Express Metrix provides a comprehensive view of IT assets and lets you understand what you own, and who is using it. Quickly inventory and control IT assets from a central location, and use the powerful reporting engine to see inventory data together with software usage statistics in over 65 pre-configured reports.



**Express**  
Software Manager™



# Softchoice Delivers a Better Way to See IT

The Softchoice LiveInventory service gives you the ability to quickly and easily analyze all the software and hardware operating in your MS Windows or Linux environment. You'll get a comprehensive inventory of your organization's desktops, notebooks, servers, and PocketPCs, regardless of their location, and with little strain on your resources or infrastructure. Powerful analysis engines will translate your inventory results into more than 160 meaningful reports, accessible any time and in multiple formats. Combined with assistance from your dedicated Softchoice account representative, LiveInventory will help you save money and take control of your IT assets. We can help you:

1 YR PER / SEAT \$15.34

- Manage IT expenditures
- Harvest unused technology
- Forecast migration costs
- Manage software licensing compliance
- Determine security vulnerabilities

softchoice

## LiveInventory

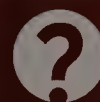
To sign up for a free, easy-to-deploy 7 day trial, go to: [www.softchoice.com/browser](http://www.softchoice.com/browser)

# CRAVE MORE INFO? CHECK OUT PRICING, SPECS AND MORE ONLINE AT [WWW.SOFTCHOICE.COM/BROWSER](http://WWW.SOFTCHOICE.COM/BROWSER)



MANAGE IT

7



## Did You Know? Preparation Pays

Enterprises that fail to integrate usage and inventory data to manage their software assets will overbuy licenses for 60% of their portfolio and be non-compliant on 30% of their software. \*Source: Gartner

## Management, Monitoring and More

Network Instruments' Observer Suite is a monitoring, analysis and troubleshooting solution designed for local and remote networks. Monitor bandwidth utilization with Real-Time Statistics, optimize network devices with a full SNMP management console, and track application session flows and failed transactions with Application Analysis. Get complete network visibility with Observer Suite.

CD ROM \$3,973.00



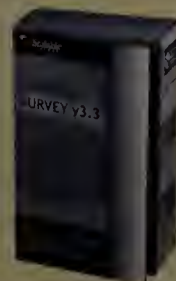
**NETWORK  
INSTRUMENTS**



## Drill Down on Usage

Survey™, by Scalable Software, will gather inventory and usage metrics on hardware, software, thin clients and printers throughout a distributed network. Survey allows companies to understand the value being delivered by their IT expenditures by understanding ACTUAL asset usage, not just when it is open or turned on.

CD ROM \$86.00



**Scalable™  
SOFTWARE**

1.877.967.3737

softchoice





# Step Into The World of Windows Graphics

It's good to get noticed. It's even better to stand out from the crowd. Whether for print or the web, a little creative juice can help you deliver eye-popping creations that will leave a lasting impression. With time saving solutions, integrated capabilities, and high-powered printers for a cost-conscious market, we've got the tools you need to grab people's attention—without breaking the bank.

Learn more at [www.softchoice.com/browser](http://www.softchoice.com/browser)



## Digital Imaging Success

Jasc's Paint Shop™ Pro® 8 is the most complete, easy-to-use software for creating professional digital imaging results. By combining automatic and precision tools with an integrated learning system, Paint Shop Pro helps you produce professional results with power and ease. With the unparalleled power of Automated Productivity Scripts™ and Dynamic Personalization™, Paint Shop Pro increases productivity and enhances workflow like no other digital imaging software on the market. Paint Shop Pro is your complete solution for print and Web. CD ROM \$100.00

**CRAVE MORE INFO?**

**CHECK OUT**  
PRICING, SPECS AND MORE AT  
[WWW.SOFTCHOICE.COM/BROWSER](http://WWW.SOFTCHOICE.COM/BROWSER)

Jasc Software®

the power to create®



### ! Tips and Tricks: Save time...

- Utilize scripts to automate repetitive tasks such as colour conversion to increase productivity.
- Save your graphics files as PDF's for compact and easy delivery.

### The Complete Design Environment is Here!

The Adobe® Creative Suite is an integrated design environment that combines full, new versions of Adobe's latest creative tools with innovative file-management features, a smooth PDF workflow, and comprehensive design resources. For a full listing, go to [www.softchoice.com/browser](http://www.softchoice.com/browser) CD ROM \$1,230.00







## The World of Web Development

Get professional-level functionality and control for every aspect of web development with Macromedia Studio MX 2004 - a complete suite of industry-leading web tools that includes Dreamweaver, Flash, Fireworks, Coldfusion and Freehand. Take advantage of a consistent user interface and seamless integration across applications to streamline your design and development workflow.

CD ROM \$900.00



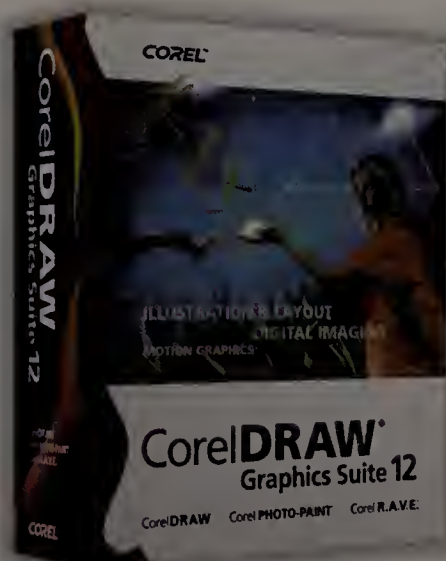
## Deadlines Killing You?

The Zboard™ customized keyboard for Adobe® Photoshop® has 139 labeled shortcut commands right on the keys! Now you can work like a pro to quickly and easily access time saving commands. No more memorizing! There is so much more to Zboard™ - check out our other keyboards for Flash, Dreamweaver, 3ds max. Keyboard Panel \$26.00



# Graphics Suite Powerhouse

CorelDRAW® Graphics Suite 12 is here. With integrated applications for vector drawing, page layout, digital imaging and motion graphics all in one box, this suite offers value that is second to none. With new smart design tools, it's now easier to produce more creative and accurate objects - giving you a more powerful Windows® graphics suite. Discover advanced features that increase productivity, such as real-time visual feedback. Keep your workflow smooth with industry-standard file compatibility, including SVG, AutoCAD®, HPGL, Adobe® Photoshop®, Adobe® Illustrator®, PDF, and new Microsoft® Office export.



## Did You Know: Graphics History

- In 1963 the Mouse was invented by Doug Englebart of SRI
- GIF (CompuServe) and JPEG (Joint Photographic Experts Group) image formats were introduced in 1987

OKI™



## High-Productivity Color Printers

OKI® Color Series printers bring affordable Digital LED Color printing to a cost-conscious marketplace. The purchase price is highly competitive as well as the cost per page and total cost of ownership. OKI® Single Pass Color Digital LED Technology keeps these printers running strong - even with long printing jobs in both color and monochrome.

## Printing for the Entire Creative Process

The HP Designjet 120 Series Printers provide small agencies, graphic designers, and production staffs an affordable solution that can dramatically improve production workflows throughout the entire creative process. Whether designs call for postcard-size images, full color pages, or banner-style communication, this printer delivers professional quality images. C7791A \$1,264.00



\*Stand Sold Separately

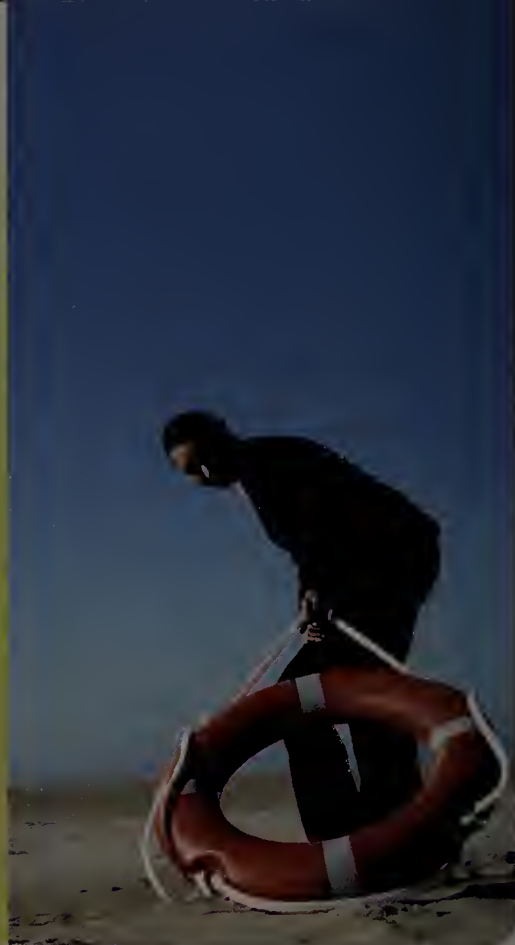




## Feature: Effective Patch Management

Recent security outbreaks like SoBig.F and W32.Blaster have changed the way people think about patch management. It's not surprising when you consider that in the majority of cases, having a recent patch could have helped avoid these disasters altogether. So why not take control? With solutions to help you stay aware of the latest updates, assess your vulnerabilities, and then deploy security patches to where they're needed, you'll never have to rely on hindsight again!

**Drill down into more information at:**  
[www.softchoice.com/browser](http://www.softchoice.com/browser)



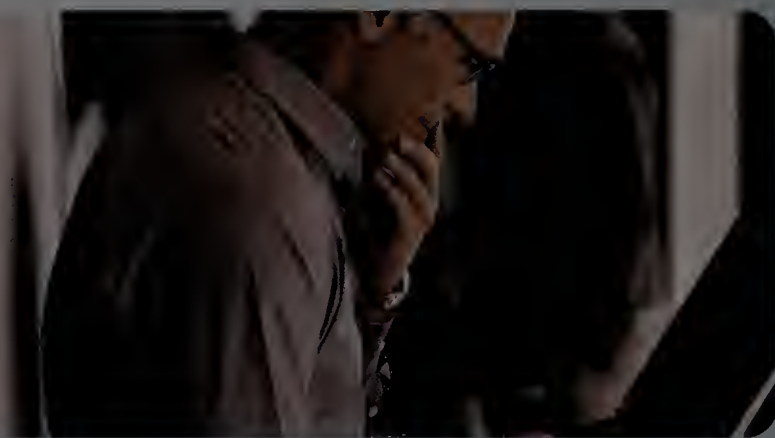
## Patch Management Made Easy with Microsoft Software Update Services

Software Update Services SUS enables administrators to quickly and reliably deploy the latest critical updates, security updates and Windows service packs (SPs) to Windows 2000 and Windows Server 2003-based servers and desktops running Windows 2000 Professional or Windows XP Professional. SUS is a no-charge add-in component for Windows Server available for download direct from Microsoft.



### Did You Know: Time to Act...

- The 2002 Sarbanes-Oxley Act requires that all PCs belonging to public corporations run supported operating systems and software that is current with security patches.
- Nearly 95% of security breaches exploit vulnerabilities for which a countermeasure exists. \*CERT Coordination Center



## Systems Management Server

Systems Management Server 2003 (SMS) provides a comprehensive solution for change and configuration management for the Microsoft platform, enabling organizations to provide relevant software and updates to users quickly and cost-effectively. SMS 2003 delivers the necessary tools to enable enterprises to stay aware of the latest updates, identify software vulnerabilities, and then quickly and easily retrieve and deploy the update in an accurate, verifiable and controlled manner.

**Microsoft**

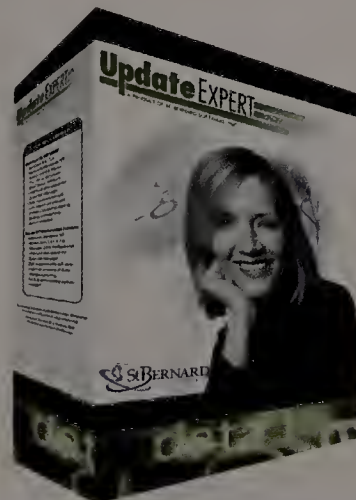




# Proactive Patch Management

St. Bernard Software proudly presents UpdateEXPERT, a software patch management tool that scans your network for missing hotfixes, validates your installations, and then installs updates to all servers and workstations remotely without a required client agent. UpdateEXPERT features a comprehensive database of patches that are thoroughly researched and tested for deployment and interdependencies with other updates by St. Bernard Software's patch experts. St. Bernard Software has been at the cutting edge of patch management since early 2000.

To learn more about UpdateEXPERT, go to  
[www.softchoice.com/browser](http://www.softchoice.com/browser) 1-50 User 1Yr \$726.00



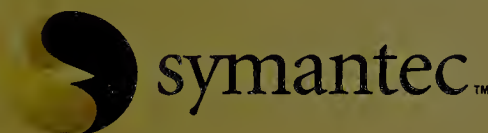
# Prevent Attacks Before They Occur

**Symantec DeepSight Alert Services** provides personalized vulnerability and malicious code alerts to bridge the gap between awareness and action. The service delivers notification of vulnerabilities as they are identified, providing timely and actionable information to help users distribute patches and updates immediately. Symantec analysts monitor potential threats across more than 18,000 distinct product versions and information from more than 150 authoritative sources. They provide a detailed analysis in each alert and update, describing its severity and potential impact, technical makeup, the systems that might be affected, available patches or workarounds, and comprehensive mitigation strategies. For a free 30 day trial of the service, go to [www.softchoice.com/browser](http://www.softchoice.com/browser) Sub 1Y 01-02 User \$808.00

**Symantec™ DeepSight™ Alert Services**

# A Holistic Approach to Preventing Blended Threats

**Symantec Enterprise Security Solutions** incorporate the latest technology in addressing blended threats such as Sobig and Blaster. Through integrated protection and response capabilities, customers were able to prevent Blaster and Sobig from ever infecting their systems. With Symantec DeepSight Alert Services, administrators receive early warning of new vulnerabilities. Symantec Gateway Security and Symantec Client Security prevent networked systems, as well as remote offices and telecommuters, from being infected. Viruses and worms are blocked by default in these integrated, best-of-breed security solutions. For a white paper on this comprehensive approach, go to: [www.softchoice.com/browser](http://www.softchoice.com/browser)



# The Most Affordable Way to Confront Patches

Softchoice's ATLAS (Advanced Tracking of Licenses And Software) technology enables organizations to electronically distribute, deploy, and manage almost any type of software - including software patches! With ATLAS you'll reduce your software headaches and management costs, and better serve your user community. Most importantly, ATLAS is complementary tool-set offered exclusively by Softchoice to our customers - how's that for TCO!



# Take Control with IBM

**IBM Tivoli Configuration Manager** can help you gain total control over your enterprise software and hardware. Its software distribution module can give you the ability to rapidly and efficiently deploy complex mission-critical applications to multiple locations from a central point. After systems have been deployed, the inventory module lets you automatically scan for and collect hardware and software configuration information from computer systems across your enterprise.







# Better Patch Management with Wyse™ Alcatraz™

As the summer 2003 worm attacks showed, not all virus problems can be solved by anti-virus software. Hackers are writing malicious code that can only be prevented by an operating system patch. Patch management is now as critical to an enterprise security plan as keeping virus-definition files up to date.



12

## The Ultimate in PC Control

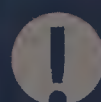
Wyse™ Alcatraz™ is a cost-effective way to plug holes in your security plan. This easy to use software manages PC's with any degree of centralized control and user freedom for maximum employee and IT productivity. With Alcatraz, PC's can be controlled along a sliding spectrum of settings. Users can have full functionality, or a PC can be turned instantly into a fixed-function device such as a kiosk or Windows terminal. Between the two extremes, administrators can grant or restrict access to browsers, peripherals, storage devices, applications and Windows settings. Standard License \$62.00

Until now, keeping your PC's properly patched was a very time-consuming, expensive, and onerous task.



# WYSE

When a new worm or virus is spreading, you're in a desperate race against the clock. Now, for a great per-seat price, Alcatraz brings you an easy way to identify holes - and increase your peace of mind.



### Warning: Big Threat

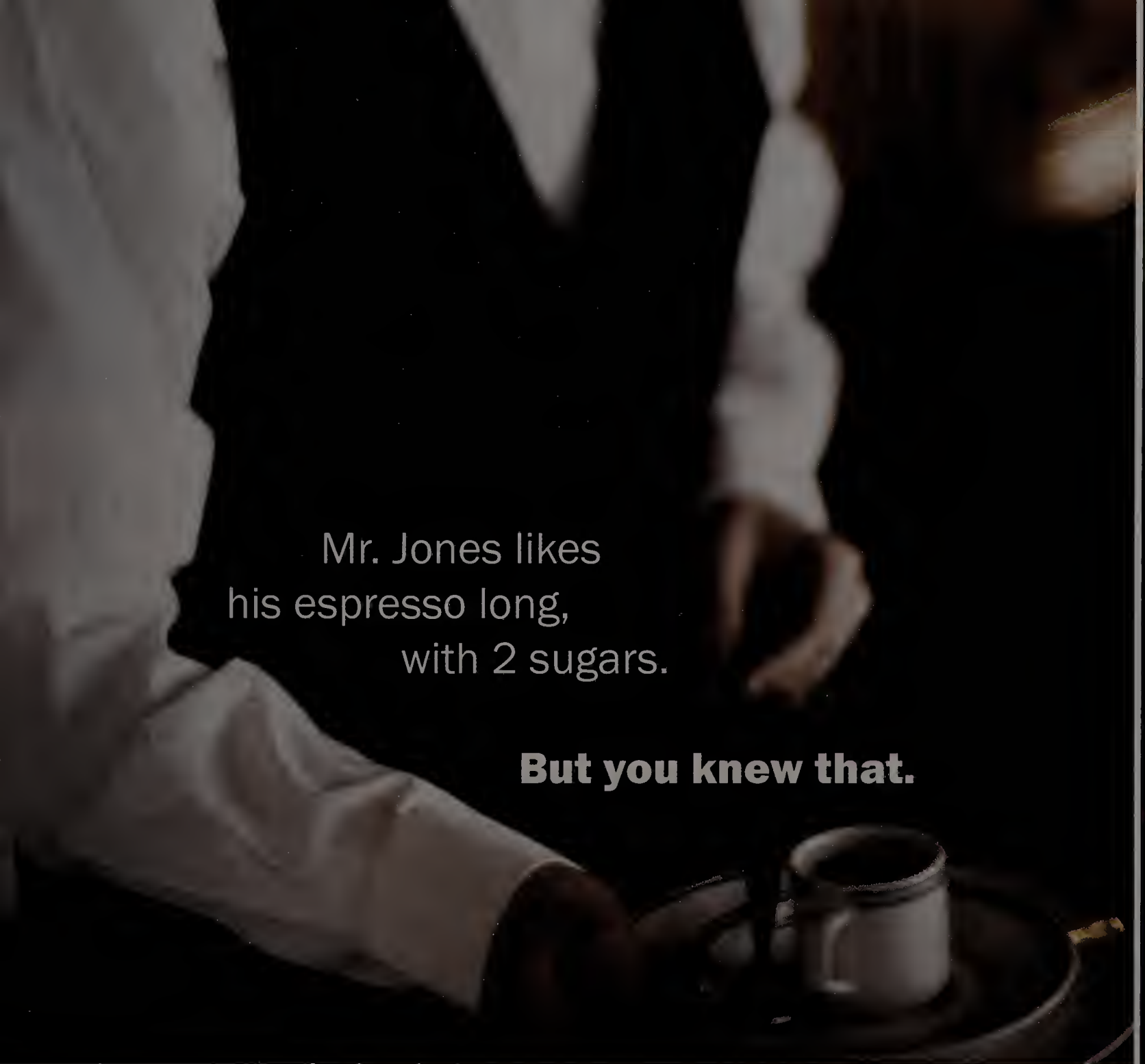
Without effective patch management, your chances of getting hit with a virus or worm are considerably higher

### Solve these Patch Management Challenges

- Relying on users to do manual updates from emailed instructions
- Mixed OS environment with different patches needed. Some support automatic updates, others don't.
- Not all users have automatic update turned on, and nothing prevents them from turning it off.
- Viruses are spreading by pretending to be Microsoft patches.
- Your automatic update can't pick and choose the updates you want. Some updates break applications; others make systems unstable.
- Mass automatic updates are a bandwidth nightmare.

**For Example:** Alcatraz easily finds all of the "Internet Explorer 6.0 users" from a central console and then can remotely install Service Pack 1 to all of them. To protect bandwidth, it sends an update file to a remote location where it can be locally served up to the PC's.





Mr. Jones likes  
his espresso long,  
with 2 sugars.

**But you knew that.**

Keeping customers like Mr. Jones happy is all about knowing what they want, when they want it. Simple, right? The only trouble is that until recently, the technology needed to track customer requests, manage support issues and provide consistent, efficient service has been the domain of large enterprises with plenty of bandwidth and deep, deep pockets.

Not so anymore. Through the combined expertise of Microsoft and HP, establishing an effective CRM solution is now simpler and more cost-effective than ever before.

**Microsoft**



With HP's tested hardware configurations and familiar, industry-standard user interface providing a foundation, the new Microsoft CRM solution is an easy way for any sized organization to empower individuals, teams, and management to have more productive and successful relationships with customers, just like Mr. Jones. And if he's happy, you're happy.

To learn more about leveraging the complete CRM solution from

Microsoft and HP, call **1.800.268.7638** or visit

**[www.softchoice.com/browser](http://www.softchoice.com/browser)** for details.

**Microsoft & HP: A Winning Combination**





# Saving is Believing

One of the easiest ways to reduce overhead costs is to eliminate redundancy. That means consolidating resources, finding innovative ways to extend the use of existing technology and identifying new, multi-purpose tools to help you free up elbow room, save money or both. When it comes to matching your IT resources with real business needs, it just doesn't get any better than this.

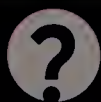
## Serve More With Less

Simple is better. And doing more with less doesn't have to come at the expense of operational excellence. Through Microsoft Server consolidation, you have the opportunity to reduce the complexity of platforms and improve the overall manageability of your IT infrastructure. The benefit to you? Higher availability, increased flexibility and better alignment between IT resources and business goals. Since when did doing more with less look so good?

The key to consolidating your current environment is to have a standard process for planning, designing, deploying, and managing the project.

For more information on how you can serve more with less, visit [www.softchoice.com/browser](http://www.softchoice.com/browser)

**Microsoft**



## Did You Know? Server Consolidation

- Reduces hardware and software purchases
- Decreases time spent managing infrastructure
- Lessens infrastructure vulnerability
- Cuts the need for power, cooling and space

## Reduce Your Storage Costs



VERITAS StorageCentral™ is a powerful storage resource management solution that will help you reclaim storage & block unwanted files, reducing backup and disk costs. You'll also reduce network traffic by eliminating duplicate, stale, and inappropriate files from regular backups. And finally, with less data backed up, you'll use fewer backup tapes, and take less time to restore.

**VERITAS**



## Is Your Printing Cost-effective?

Using that outdated printer may be costing you money. Although it still works fine, it's probably not working to save you money or improve productivity. HP's commitment to innovative Printing & Imaging products has resulted in the introduction of efficient printing devices which have increased productivity and lowered the users' operating costs.

In fact, analysts\* agree that companies should scrutinize the total cost of printing, which includes not just the printer's purchase price, but ongoing costs of supplies, power and servicing. They cite evaluating new technologies, and putting the right number of devices in the right location as important strategies to boost productivity and realize significant savings.

To learn more about what Softchoice & HP can do to help you lower your printer costs, visit [www.softchoice.com/browser](http://www.softchoice.com/browser)

\*Gartner Research Note



SMART MONEY

## CHECK OUT A THOUSAND DOLLAR WWW.SOFTCHOICE.COM/BROWSER AND YOU COULD WIN SOFTCHOICE SHOPPING SPREE!

15

### Greater Control Over Storage Costs

With CA's New BrightStor® Storage Resource Manager 6.4 you'll maximize utilization of current storage capacity by monitoring, analyzing and automating networked storage resources - all from a central location, across distributed and mainframe environments.



Computer Associates®

### Saving Lots with Multifunction

The Brother MFC-8420 & 8820D is a 5-in-1 networkable flatbed laser multifunction center combining performance, connectivity, and reliability. It delivers ultra-sharp monochrome laser resolution at the fastest print speed in its class, up to 17ppm. With its PC fax capability you won't have to depend on paper documents, saving time and paper costs.

MFC-8820D \$651.00  
MFC-8420 \$577.00

At your side.  
**brother**



## Enterprise-Class Virtual Machines

VMware GSX Server is an enterprise-class virtual machine software for business-critical environments. In its third generation, VMware GSX Server is one of the most flexible and easily deployed server virtualization products on the market.

Enterprise customers rely on VMware GSX Server to deliver server scalability, reliability, and high availability and to maximize return on IT investments. The product is used across the enterprise to:

- Implement server consolidation
- Deliver high availability
- Provision servers rapidly
- Streamline training and demo center operations
- Improve software help desk and technical support operations



02 CPU V2 5 \$2,405.00



1.877.967.3737

softchoice



Microsoft®



COLLABORATE



16

# Get Connected

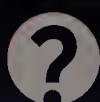
Solve productivity challenges with Microsoft Communication and Collaboration solutions.

# Get Smarter



**Earn up to \$38,000 cash back!**  
Purchase Microsoft Office 2003 with license and Software Assurance by April 30, 2004 and receive a rebate up to \$38,000 cash back directly from Microsoft. Contact your Softchoice Rep for full details.

In a perfect world, no matter where they are or what method they use, your best and brightest are collaborating freely using the most current information available. That means smarter decisions, improved timelines and greater productivity. Where Microsoft is concerned, that world is closer than you think. With a comprehensive set of communication and collaboration solutions, achieving the ultimate goal of increasing information worker productivity is now well within reach.



## Did You Know? Technology Outlook

Collaboration services, instant messaging, Web conferencing, and teamware will ultimately be ingrained in business processes, enabling a massive reduction in coordination costs across the enterprise.

\*META Group

Through Microsoft Windows® SharePoint™ Services, Microsoft Exchange 2003, Microsoft SQL Server™ and Microsoft Office Professional Edition 2003 your organization can achieve:

**Team Collaboration** - Shared workspaces allow employees, customers, partners, and suppliers to achieve improved timeliness and productivity in creating documents and completing transactions.

**Integrated Communications** - It's all about the information, especially when it's delivered in real time, anywhere and from any device, via e-mail, group scheduling, conferencing, instant messaging, and enhanced file and printer sharing.

**Mobile Workforce** - Keep your people moving with mobile collaboration and communication solutions guaranteed to increase the experience of remote team activities through easier access and connectivity.

Transforming your business into a smart, connected organization is easy when you give your people familiar, user-centric productivity tools. For more information on how Microsoft Windows SharePoint Services, Microsoft Exchange 2003, and Microsoft Office Professional Edition 2003 can help enhance communication and collaboration in your organization, visit [www.softchoice.com/browser](http://www.softchoice.com/browser) or call 1.877.967.3737.

**CRAVE MORE INFO?** **CHECK OUT PRICING, SPECS AND MORE ONLINE AT**  
[WWW.SOFTCHOICE.COM/BROWSER](http://WWW.SOFTCHOICE.COM/BROWSER)

softchoice

[WWW.SOFTCHOICE.COM/BROWSER](http://WWW.SOFTCHOICE.COM/BROWSER)



# Business Intelligence

Creating an agile business means having easy access to current, actionable information. The equation is simple: the better your understanding of the latest trends, the easier it is to drive performance. Whether your focus is the web, the enterprise or both, these solutions can give you the insights you need to stay ahead of the curve.



ANALYZE THIS

17



crystal enterprise™

## Reporting, Analysis and Delivery for the Web

# 10

Crystal Reports 10 and Crystal Enterprise 10 are available now! Do you struggle to combine data from multiple systems into a single report? Do you have to choose amongst a mixture of home-grown tools and stand-alone report writers to meet different needs?

Crystal Enterprise 10 is a common architecture for data access, reporting and information delivery that allows you to respond quickly to any reporting or application development need. Crystal Enterprise is designed to integrate seamlessly with your existing data, web and application investments without imposing a new set of standards and processes.

For more information on what's new in Crystal Reports 10 and Enterprise 10 visit [www.softchoice.com/browser](http://www.softchoice.com/browser) or [www.crystaldecisions.com](http://www.crystaldecisions.com)

### Increase Your Online Insight

**WEBTRENDS**  
web analytics from NetIQ

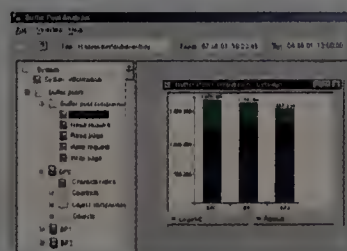
WebTrends web analytics solutions let you make the most of what's working on your web site and fix what's not. From content and navigation to campaigns and search engine marketing, WebTrends provides the insight you need to be more effective on the Web. You'll be able to acquire more visitors, convert them into customers and retain them for the long term.



To learn more, visit:  
[www.netiq.com/go/browser](http://www.netiq.com/go/browser)

### Performance Enhancement from IBM

DB2® Performance Expert for Workgroups provides a comprehensive view that consolidates, reports, analyzes and recommends changes on DB2 performance-related information. It can selectively employ and integrate the view from all trace outputs, snapshot event and DB2 V8 Health Monitor outputs. And with its starter set of OnDemand capabilities, DB2 Performance Expert also provides recommendations for system tuning to gain optimum throughput.



1.877.967.3737

softchoice



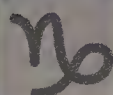


# High Tech Horoscopes



## Capricorn

Dec. 22-Jan. 19



Your hopes of using the space saving and ultra-thin **HP ScanJet 4670 See-thru Vertical Scanner** as a miniature tanning bed are dashed when you realize that you are not, in fact, miniature.

## Aquarius

Jan. 20-Feb. 18

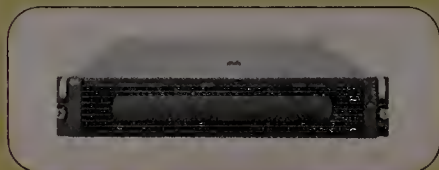


You'll wish you'd had your **HP Photo-smart 935xi digital camera** handy, when the Eagles reunite one last time to perform a 15 minute concert in your basement rec-room. The stars advise you stock up on additional Smart Digital cards for the event.



## Pisces

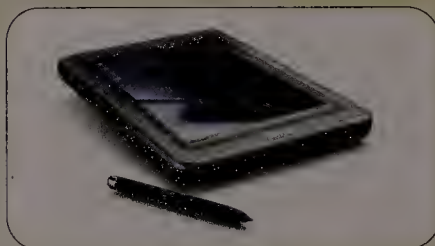
Feb. 19-Mar. 20



The **HP StorageWorks NAS 2000c** gives your office better storage management and data protection, which explains your CIO's anger when he notices you took it home with you. On the upside, you'll have more spare time to pursue important things, like finding a new source of income.

## Aries

Mar. 21-Apr. 19



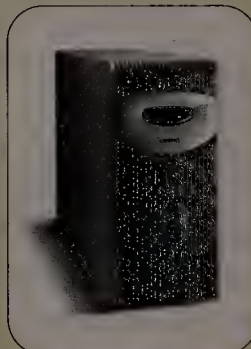
The heightened performance of HP's next generation **Tablet PC TC1100** will whip you into a frenzy with its hot docking and dual display modes, but good luck explaining that to the SWAT team, the judge, and for that matter, the national TV audience. Call your lawyer Aries.

## Gemini

May 21-Jun. 21



Uptime for your online Cable-knit Sweater Outlet hits an all-time high after the implementation of a more stable, more powerful, **HP Proliant ML 350 G3 series server**. The power of the Proliant combined with the warmth of cable-knit wool. It's a win-win, situation Gemini!

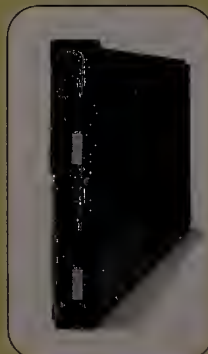


## Cancer

June 22-July 22



Weighing in at a svelte 3.8 pounds, shedding light on all in its path, ability to travel wherever business goes - admit it, the more you think about the **HP Digital Projector mp3130**, the more you burn with bitter jealousy.



## Leo

Jul. 23-Aug. 22



Your 10th-level Paladin may be undefeatable in spell casting, but when it comes to floating-point calculations, you'll grudgingly admit that the **HP Proliant BL20p G2 Blade Server**, with its 3.2 GHz processor, and 8 GB memory has you outclassed. The stars predict a level-up in value. Tally ho!

## Taurus

Apr. 20-May 20



Sure, it's got integrated WLAN 802.11b and Bluetooth, a 64k color transfective display - and much more. But although "Power In Your Pocket" might seem like a great way to describe the new **HP iPaq h4150**, be selective in the manner and frequency of the term's usage.

## Virgo

Aug. 23-Sep. 22



The enormous variety of genuine **HP Supplies, Accessories, and Services** is truly staggering, but do little to explain why you, yourself, are actually staggering. Frankly, the stars are concerned.

## Libra

Sep. 23-Oct. 23



Your attempts to relay messages telepathically to your boss will finally prove fruitful, as you convey to him with your mind that the **HP Compaq d330 Series of business desktops** are a marriage of form and function, balancing value, performance and flexibility.

## Scorpio

Oct. 24-Nov. 21

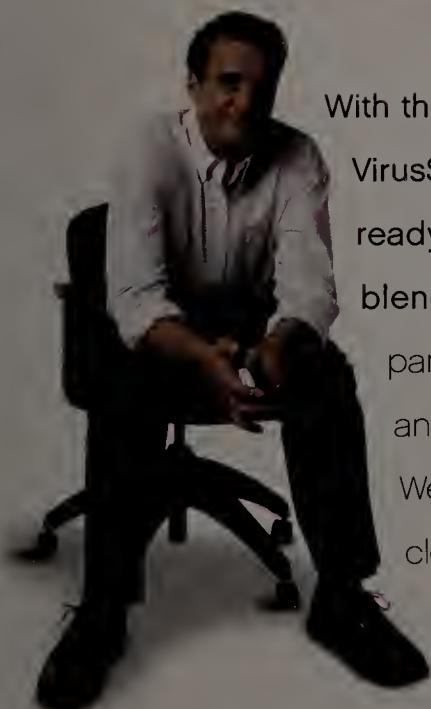


You've been using the term "hamfisted" to describe the productivity gains and cost savings of the bandwidth maximization experienced since implementing **HP's ProCurve Switches**. However, you're heartbroken to find out that this term has next to nothing to do with fistfuls of delicious, golden ham, and is in fact a complete misnomer.



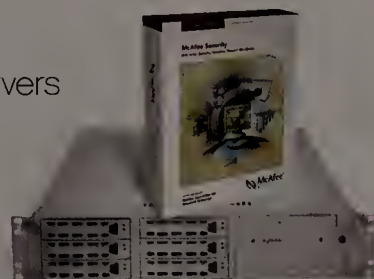


Stop worrying about security  
and start focusing on growing your business.



With the power of McAfee® WebShield® Appliances, McAfee VirusScan® 7.0 and McAfee ePolicy Orchestrator® you're ready to protect your network against viruses, spam, and blended threats. These best-of-breed technologies are part of the McAfee System Protection Solutions portfolio and our McAfee Protection-in-Depth™ Strategy. McAfee WebShield Appliances guard your Internet gateways and clean or quarantine any infected files;

McAfee VirusScan 7.0 protects servers and desktops, filtering viruses before they can spread; and McAfee ePolicy Orchestrator gives you a single comprehensive



management tool for everything—from deploying anti-virus updates to ensuring security policy enforcement across all your systems. So instead of putting out security fires, you can start turning your attention to saving money, increasing profitability, and helping your people get the job done.

**Start protecting your business today.**

**1-877-967-3737**

[www.softchoice.com/browser](http://www.softchoice.com/browser)

**Network Associates®**



# Big kahuna protection

The right software gives you big business protection without costing big bucks.

## CA Protection Suite Antivirus and Backup software for small business

Protecting and storing your data is vital to the success of any business, regardless of size. That's why we're pleased to offer the CA Protection Suite for small business. The CA Protection Suite gives your company the same superior antivirus protection and data backup capabilities that we've provided to Fortune 500® companies without costing a fortune. And because the CA Protection Suite features award-winning eTrust™ Antivirus and BrightStor® ARCserve® Backup software in a value-priced bundle\*, rather than multiple point solutions, you can be secure in the knowledge that you'll save money and everything will integrate seamlessly. Try it on your own network for a limited time and see for yourself—it won't cost you a cent. To find out more, go to [ca.com/smb](http://ca.com/smb).

**FREE  
TRIAL**

Receive a free trial of the CA Protection Suite and money-saving offer.  
Visit [ca.com/smb](http://ca.com/smb) or call 1-800-576-9727.  
(mention code 1159)



Computer Associates®

\*also available individually

© 2003 Computer Associates International, Inc. (CAI). All trademarks, trade names, service marks, and logos referenced herein belong to their respective companies.

# Little fish affordability



user can see what happened yesterday and why," he says. "We're not waiting for the Monday morning status meeting or phone call."

The open-source nature of SourceForge.net also carries benefits.

As open-source development proliferates, people will contribute to existing projects, producing additional functions and new security features. Stan Carney, a consultant working with Allstream, tells me that as each project gets rolling, the open-source community comes and adds the changes it needs without having to invest in a ground-up development program. "It brings software development closer to traditional engineering," he says. That's because "code is no longer hidden in a black box that can't be inspected."

The more that open source code moves into the enterprise, the greater transparency — and accountability — there will be in development. That places the emphasis even more squarely on people with project management skills, whose jobs will remain close to home. **44148**

DAVID MOSCHELLA

## Revenge of The Dot-coms

**S**TARTING a few years ago, we were all supposed to laugh at the dot-coms. How could anyone ever have believed, let alone invested in, their pie-in-the-sky theories and imaginary business plans? Surely, after the collapse of the Internet bubble, we would all come back to our senses, and normal patterns of business leadership would resume.

Of course, no one is laughing anymore. The reality is that in an expanding range of sectors, the dot-coms are getting the better of their pre-Web rivals. Companies whose very survival was recently questioned have turned the tables and are now threatening the survival of others. It's been an impressive recovery.

Consider just a few of the most prominent examples. Amazon.com has crushed Barnes & Noble and has successfully expanded into many forms of retail. Google and Yahoo/Overture Services dominate the online advertising business. Expedia maintains a healthy lead over the airline industry

joint venture Orbitz. Kazaa.com and Apple's iTunes have all but eliminated the offerings of the music industry giants. PayPal and eBay control the Internet funds-transfer business. WebMD remains the leading health care site.

Of course, there are other industries — such as news, banking and investing — where established pre-Internet firms are also online leaders, as well as individual online successes from other industries, such as Dell (computers) and Wal-Mart (retail). But when it comes to creating major new services and important new forms of value, the start-up companies continue to have the edge. While this is especially true in consumer markets, the same pattern has generally emerged even in business-to-business markets.

Perhaps even more noteworthy, the strategic impact of the dot-coms is now starting to live up to some of the



DAVID MOSCHELLA'S latest book is *Customer-Driven IT: How Users Are Shaping Technology Industry Growth*. Contact him at [dmoschella@earthlink.net](mailto:dmoschella@earthlink.net).

most visionary bubble-time hype. Whereas many people once dismissed Amazon as a mere book-seller and Google as just the latest search-engine market leader, we can now see that they are positioning themselves as powerful e-commerce platforms and important providers of general-purpose technology services.

Both Amazon and Google have made great progress toward becoming

broad-based Internetwide resources that, like operating systems and databases before them, can be used to create new forms of value in an ever-expanding set of ways. They are even managing to give tangible meaning to the idea of Web services, something that Microsoft, IBM and other pure IT players have struggled to do.

Why haven't established pre-Internet market leaders responded more effectively? The answer should be clear to anyone familiar with IT industry

history. Today's dot-com survivors are outperforming their established rivals for the same reasons that many venture-capital-backed IT start-ups have surpassed established IT suppliers. The younger companies tend to be faster, more focused and more motivated, resulting in more responsive organizations not bogged down by history. In other words, established pre-Internet businesses are having the same problems dealing with newcomers that mainframe, minicomputer and workstation vendors once did.

The bottom line is that there was always a lot more substance to the dot-com boom than many of us now seem to remember. While the many financial excesses of the late 1990s certainly needed a major correction, the ideas that created the bubble have lived on.

A decade from now, much of the promise of the dot-com revolution will be fulfilled. **44138**

### WANT OUR OPINION?

More columnists and links to archives of previous columns are on our Web site: [www.computerworld.com/columns](http://www.computerworld.com/columns)

## READERS' LETTERS

### Net Tax a Bad Idea

**R**EGARDING JACK VINSON'S letter of Dec. 15 [QuickLink 43384]: Brick-and-mortar merchants in most states collect and remit only one tax rate, not 7,500. Then the state revenue department distributes the money to the state, county and city. A sales tax on the Internet would put most merchants out of business, but maybe that is what Mr. Vinson has in mind.

James P. Cox  
Varna, Ill.

### Windows Server's Unnecessary Bloat

**W**HAT AN EXCELLENT article on the newest update of the Windows Server series ["Windows Server 2003: Raising Shields," QuickLink 42985]. I have always wondered why a server would include Outlook Express, Media Player and Remote Assistance.

I have installed an evaluation version over one of my test Windows 2000 Advanced servers and was pleased at the ease of doing that, but disappointed when I immediately needed to apply several critical patches, especially the one

for Internet Explorer. If you need to grab updates, it seems something thinner and much less vulnerable than Internet Explorer should be included.

Thomas K. Edgar  
Distance learning technologist, U.S. Department of Defense, Stuttgart, Germany, [tedgar@techie.com](mailto:tedgar@techie.com)

### A Real Hard Crash

**W**HEN MY 40GB HARD DRIVE died, I wasn't bothered much, because it was just left over from the original system when I made a 120GB drive my primary. So I took all the screws out of it and opened it up. There was a nice, shiny disk and the supersharp read/write heads. I couldn't get the bolts off to remove the platter, so I just reached in with the pliers to bend it out. *Bam! Crash! Tinkle!* The sucker was made of glass, not metal, and shattered into about 100 pieces. OK, NSA, try putting that together after you find it in the landfill ["Dawn of the Undead Data," QuickLink 43381].

Chuck Peterka  
Exton, Pa.,  
[clpeterka@aol.com](mailto:clpeterka@aol.com)

### Not All Academic

**T**HE EXPERIENCE of the IT community here in Jacksonville diverges from the findings of Boston University researcher Nitin Joglekar ["Sidebar: Researcher Says Off-shore Moves Don't Lead to Big U.S. Job Losses," QuickLink 43688]. Ever since Bank of America, Merrill Lynch and Prudential chose to send work to India, the local programming market has severely tightened. This began in early 2001 and has continued. The only factor that seems to drive the offshoring is pure greed and shortsightedness by CEOs.

Jeff Schwandt  
Senior developer,  
Jacksonville, Fla.

### Either Way, No Jobs

**A**CCORDING TO THE ARTICLE "Another State Looks Off-shore" [QuickLink 43685], the Washington State Health Care Authority awarded the contract for an IT project to Healthaxis Inc., an Irving, Texas, company that has been working with an India-based outsourcer. To be fair to both sides, I wonder how PeopleSoft, Oracle or

Deloitte (all of which bid on the project) would have approached it. Is it certain they would have used local IT workers? Chances are they would use people overseas. The outcome would be the same: no jobs for the local IT talent.

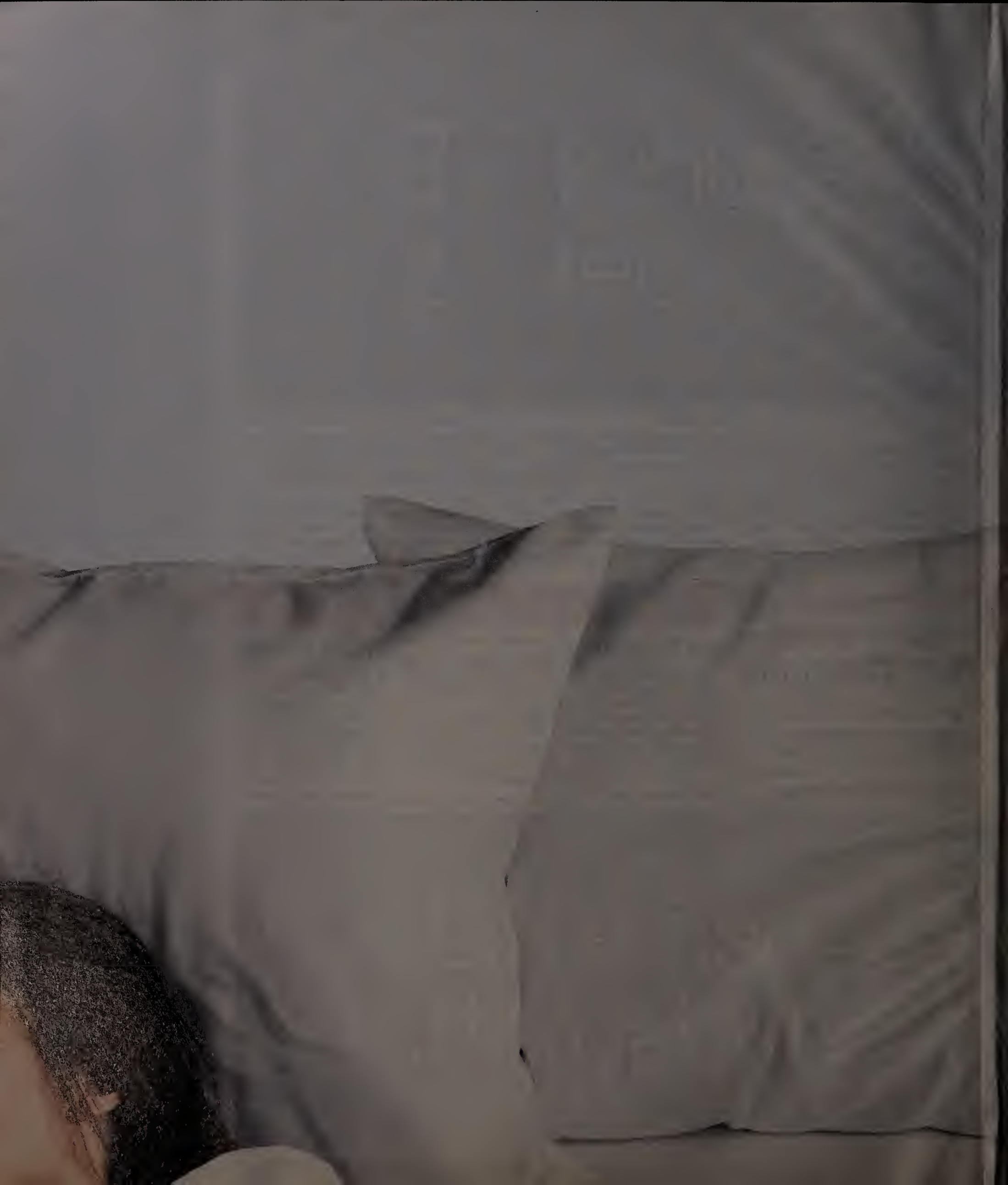
The only way out of this is for state governments that are concerned about the effect of unemployment to ban outsourcing to off-shore companies. Similarly, the federal government should impose sanctions in the form of additional taxes on companies that transfer jobs overseas. Profit is a must for businesses, but profiting at all costs is unacceptable.

Srinivas B. Raju  
Dallas

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Letters, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: [letters@computerworld.com](mailto:letters@computerworld.com). Include an address and phone number for immediate verification.

For more letters on these and other topics, go to [www.computerworld.com/letters](http://www.computerworld.com/letters)





**2:01AM CHECK INTO HOTEL 2:11AM  
CHECK INTO INTERNET 2:26AM  
WORM ENTERS ROOM 536 2:28AM  
WORM EVACUATED BY NETWORK  
2:32AM ORDER GRILLED CHEESE  
AND FRIES 2:35AM DOZE OFF**

Your mobile workforce. An army of productivity or multiple points of entry ripe for intruders? Enter the self-defending network, with integrated security woven throughout. A line of defense that delivers security where security is needed. Wherever you do business. Inside the intranet. Outside the intranet. Across the Internet. Even in hotel rooms on the other side of the planet. So your jet-lagged mobile workers stay safe and secure. And your business keeps marching forward. To learn more about how Cisco can help plan, design and manage your network security, visit [cisco.com/securitynow](http://cisco.com/securitynow). **SELF-DEFENDING NETWORKS PROTECT AGAINST HUMAN NATURE.**

**THIS IS THE POWER OF THE NETWORK. NOW.**



©2004 Cisco Systems, Inc. All rights reserved. Cisco, Cisco Systems, Cisco IOS, and the Cisco Systems logo are registered trademarks or trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries.





A NETWORK OUTAGE THREATENS  
TO SHUT DOWN GLOBAL DISTRIBUTION.

THE IT STAFF HAS 2 HOURS TO FIND  
AND FIX THE PROBLEM.

### CAN YOUR SOFTWARE KEEP BUSINESS FROM DISAPPEARING?

Business Service Management solutions from BMC Software® can. In fact, they let you predict critical performance problems and resolve them before they ever impact your business. And you can prioritize IT management, investments and resource allocations to optimize your business performance. So you can solidly align your IT investments with strategic business goals.

And protect the delivery of vital business services like sales, customer service, online transactions, logistics and distribution—whatever is most critical to your company's success. It's enterprise management software that works with your existing IT resources to let you manage what matters from a business perspective and execute with precision. Find out how at [www.bmc.com/bsm51](http://www.bmc.com/bsm51)



## Q&A

### Managing Data Centers Through XML

Tim Howes, CTO at data center automation vendor Opsware Inc., explains how the emerging Data Center Markup Language could benefit IT managers. **Page 30**



## FUTURE WATCH

### Printer Magic

Printable parts to fix PCs, TVs and maybe even the family car — your next parts order could someday be delivered through an ink-jet printer. **Page 31**

## SECURITY MANAGER'S JOURNAL

### Stepping Up to Sarbanes-Oxley

As his company accelerates its efforts to comply with the Sarbanes-Oxley regulations, Mathias Thurman must read between the lines to ensure that the IT security group's responsibilities are covered. **Page 32**

**J**ACOB CROSSMAN, a software engineer at Soar Technology Inc. in Ann Arbor, Mich., uses blogging tools from Palo Alto, Calif.-based Socialtext Inc. to keep an up-to-date engineering notebook on his ideas about a particular project that can be accessed by other project participants.

"One of the disadvantages of a paper-based engineering notebook is that it's hard to find things unless you want to go through it manually," Crossman

says. "So I decided to use the blog feature of Socialtext's software to keep track of my ideas. I would type them in, and then they're immediately searchable using another feature of the software." He is also able to link to other documents about the project using the blog entry.

Crossman is not alone. Recently, weblogs, or blogs, which let anyone with a Web browser and some easy-to-use software publish a personalized diary online, have started to emerge as valuable knowledge

management and communication tools in companies.

But blogs aren't entering through the CIO's office. They often first appear in companies as the convenient records of engineering or design projects. They're taking the same bottom-up adoption path followed by instant messaging, another collaboration tool originally used for personal communication.

Weblog software, whether free, inexpensive or not so cheap, aggregates and publishes unstructured content on the Web by time and topic. XML can be used to embed links in the blog from a variety of resources, but no knowledge of that language or HTML is necessary.

The details and features of the technology vary by vendor, but blogging software is basically a simple content management system that's designed to take content written by the blogger and post it at the top of a page.

That content is either stored in a database or a flat file, depending on the software. Usually the presentation layer is separate from the content, so that the blogger can design the look and feel of the blog and simply fit the content elements within whatever format the user wants to read. Many blogging systems provide templates to make that easier.

Using blogs, companies can easily and quickly communicate information such as project updates, research, and product and industry news both inside and outside the business. Security issues are the same as with any Internet-based application.

Even though blogging technology has the potential to become important to their companies, most CIOs haven't paid much attention to blogging, and it's not one of the tools they're considering to solve their myriad IT problems, according to John Patrick, president of Attitude LLC in Ridgefield, Conn., and former vice president of Internet technology at IBM.

"I believe it is important to the CIO and the enterprise, because blogging introduces a new way to create, share and leverage knowledge in the enterprise," Patrick says.

But Jamie Lewis, an analyst at Burton Group in Midvale, Utah, says he isn't sure all companies should immediately jump on the blogging bandwagon. "Whether companies should look into using it depends on corporate culture and the kind of culture they're trying to develop," Lewis says.

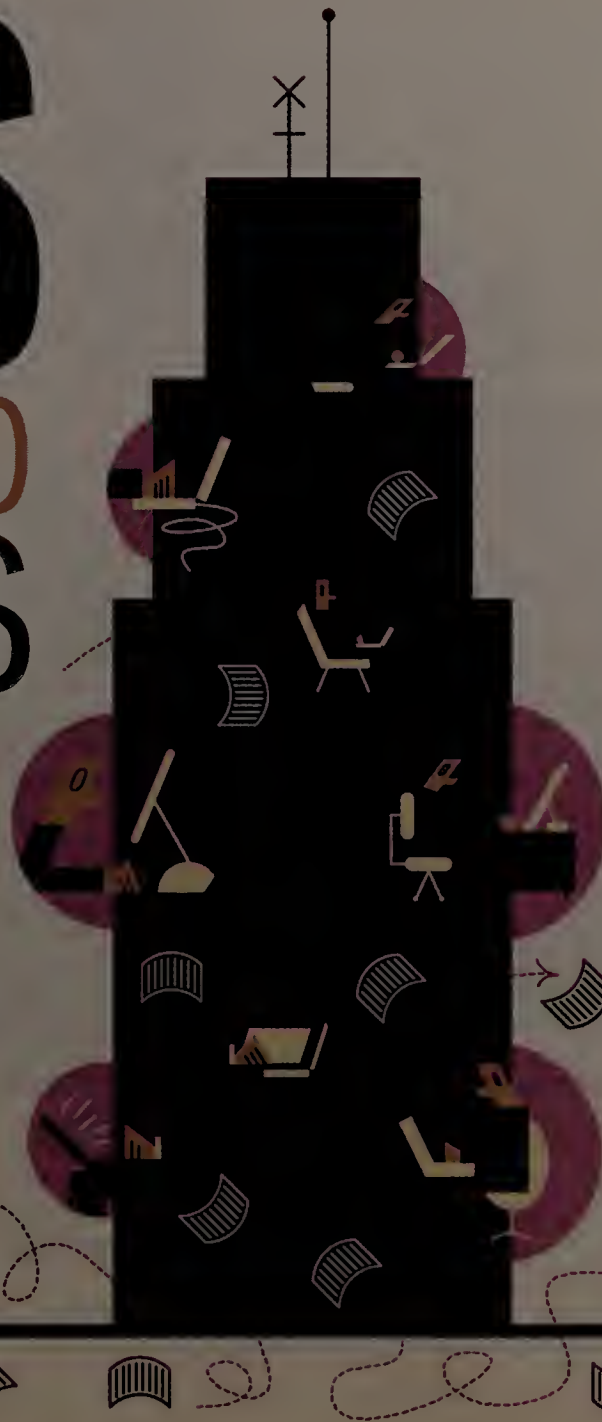
Blogging is like a lot of other collaborative tools —

# BLOGS

## BUBBLE INTO BUSINESS

Weblogs began as a personal communications medium, but they're moving into corporations as tools for collaboration and knowledge management.

**BY LINDA ROSENCRANCE**



GREG MARLY



if the company is good about trying to encourage and generate cross-functional and interpersonal collaboration and communication, then it's a good idea, Lewis says.

Internally, some corporations are using Web tools like Six Apart Ltd.'s Movable Type to create project management blogs, says Anil Dash, vice president of business development at Six Apart, a weblog software vendor in San Mateo, Calif.

"You can do things like start one weblog for each project and have it run its course," Dash says. "As the project continues along, everybody can do status updates and be able to link to every other relevant resource, whether it's on the Web or in a Word document or in a proprietary company database. So for internal use, you have a lot of flexibility, and it respects the firewalls and the other boundaries you've already put in place."

Michael Masnick, president of Techdirt Inc. in Foster City, Calif., says that while most corporations have knowledge management tools and corporate portals to organize internal data, they don't have an effective way to deal with external information. A blog allows users to integrate internal and external information.

Enterprise blogs provide companies with easy-to-use tools to manage external information, which is extremely critical because it affects relationships with customers, partners and investors, as well as internal decision-makers.

"Having an enterprise blog provides a strategic ad-

vantage over the competition and helps companies gain market share and respond faster to their rapidly changing business environments," Masnick says.

The U.S. Department of Defense's Naval Undersea Warfare Center (NUWC) in Newport, R.I., is using TeamPage enterprise blogging software from Providence, R.I.-based Traction Software Inc. to create a secure communications hub for a project to evaluate night-vision technology.

The blog is part of a pilot project to speed up communications within the DOD's test and evaluation programs. NUWC will use it to ensure that information about its testing of the night-vision technology will be available in real time to its partners, including Ford Motor Co. and the U.S. Army's night-vision lab, according to Tammi McVay, program analyst project lead at NUWC.

"[Some of our partners] will test this night-vision technology under various circumstances and log their test results and any observations that they have on our weblog, and all our other partners will have immediate access to it," McVay says. "We're working with all unclassified data for this go-round, but we'd need to look at this further to see how it would work in the world of classified information."

After the four-month pilot is over, the DOD will analyze NUWC's results and determine whether blogging has a future in the agency, says McVay.

Traction President Greg Lloyd says enterprises can use weblogs in a number of ways.

"We focus on groups within the company where communication either within the company or with channel parties or customers, or both, is part of their main business activity," he says. "What the weblog provides is a very simple way to collect, organize and disseminate information that works and acts like a Web newspaper."

## Keeping Up to Date

Weblogs give people a self-service way to find out what's happening within the company, Lloyd says.

"With our software, you can add comments or questions on any paragraph you see," he says. "So if someone in the sales organization sees something that a competitor has just announced, that salesperson can add a note under the paragraph that talks about the new product announcement and make it visible to members in the sales team or only visible to the people in the competitive intelligence group, who would then correlate it and send it throughout the organization."

Many corporations aren't aware of the substantial business potential of enterprise blogs, says Toronto-based author Jim Carroll, who has written about business weblogs.

"If I'm a customer and I'm dealing with a product that has some type of well-known problem, to be able to access a blog and track that blog and to be able to track historic postings on that blog — I think that would be useful," Carroll says. "The example I use is Harley-Davidson building a blog for its customers to keep up to date on all the cool stuff that's happening with Harley, because people are religious about their Harleys. But I don't think the marketing world has figured it out yet."

One of the reasons the upper management at most corporations hasn't really warmed up to the enter-

## Why a Business Blog?

Here are some of the ways weblogs can benefit a company:

**They're quick and easy:** Blogs aggregate information and make it relevant to their audiences in an easy-to-read format. Enterprise users can scan a customized blog and feel confident that they have a good sense of what's happening on their project, in their company or in their industry.

**They provide a central repository:** Blogs put information in a central location, making it accessible to large groups of users. Information is archived in a searchable and sortable format for future reference. This becomes useful when a user needs to look up some information from a previous month or wants to aggregate all information available about a particular company or trend.

**They create a knowledge community:** Blogs let groups share, discuss, annotate and amend content. This interactive component highlights the value of the information and allows users to quickly and efficiently identify action items.

prise blog as a marketing tool is the end of the '90s high-tech boom, Carroll says.

"I think people got excited about the Net. They got excited about it as a marketing tool and a customer-support tool — as a tool by which they could innovate their business processes. And then everything went wrong, and everyone out there is too darned terrified to try anything new right now," he says.

But at lower levels of business, the convenience and usefulness of blogs is more powerful for users than techno-skittishness.

"The trend that's happening now is that users are seeing the need for blogging like they have with other disruptive technologies, and they're bringing them into the enterprise at the workgroup or departmental level," says Ross Mayfield, CEO of Socialtext.

Mayfield says the adoption scenario begins when a single worker sets up a work space for his workgroup. The group then goes on to build a business case for how blogging is adding value just on that small scale.

"Then that person creates a work space with somebody who's in a different workgroup, and gradually what ends up happening is you gain this critical mass of building business case after business case within an organization," he says. "And by the time the CIO is really looking at the technology to make a top-down buying decision for the enterprise, they already have an existing class of business cases and proven techniques of how users are adopting it."

Mayfield says because these blogging tools are inexpensive — approximately \$30 per user per month — easy to use and accessible, there's the potential for growth within the enterprise similar to the growth of instant messaging.

"I would expect it to be the same way, where users are just going to have it first, and then managers are going to realize increasingly the value of it as a management tool," Mayfield says. **Q 43761**

## A Collaborative Difference

With collaboration software snagging a portion of IT budgets these days, how is blogging related to all those virtual meeting places being built out there?

A blog is a simple content management tool, rather than a collaboration tool like those offered by WebEx Communications Inc. and Centra Software Inc., according to Michael Masnick, president of Techdirt.

"The blog is used for presenting information in an easy-to-use format," he says. "The two things can, and often are, used in complementary ways. Think of WebEx-type applications as a meeting room and blogs as a bulletin board. Both can be used for collaboration, but in different ways."

Ross Mayfield, CEO of Socialtext, agrees that blogs are good for ongoing communications about a particular project within a company as well as with clients. Blogs are less complicated to use and less formal than collaboration suites and electronic meeting rooms.

"Companies use blogs for the conversation that occurs between team members," Mayfield says. "What's been missing is a tool to support that same lightweight communication or that simple communication that occurs, i.e., 'We're a little bit ahead of schedule,' or 'I'm running into a barrier in completing this certain task, and does anyone know where I can find that information?' It's easy for companies to create status update messages — one for internal use and one for external use."

— Linda Rosencrance



# COMPANIES THAT NEED IT NOW RUN SAP



THE BEST-RUN BUSINESSES RUN SAP



Time is money. So it's important to get new business software up and running quickly. Which is why SAP® solutions built on the open SAP NetWeaver™ platform make so much sense. Because they're designed with fast implementation in mind, you can see business results quickly. Visit [sap.com/speed](http://sap.com/speed) or call 800 880 1727 to see how fast SAP can make things happen for your company.

© 2004 SAP AG. SAP and the SAP logo are trademarks and registered trademarks of SAP AG in Germany and several other countries.



WILL A  
CHEAPER  
SERVER WIND  
UP COSTING  
YOU MORE?

A *CIO Insight* survey of IT execs revealed this startling news: 42% of the execs polled spent an average of 29 cents out of every IT dollar (!) "maintaining and managing excess complexity."<sup>1</sup> Instead, simplify. That's what the on demand world demands. You can do it with IBM eServer™ xSeries® systems powered by Intel® Xeon™ processors. Not only do they have built-in self-management features that can help improve server availability, they're also time-tested and reliable. For more information, download *Why X*, an in-depth guide to xSeries systems at [ibm.com/eserver/advantage](http://ibm.com/eserver/advantage)

*5 reasons more and more businesses are turning to IBM eServer xSeries systems.*

*Scale 1-16 way with select models. Pay as you grow.*

*IBM Director systems management.*

*Linux-ready through the entire line.*

*Mainframe-inspired technologies.*

*24/7/365 optional onsite hardware support.<sup>2</sup>*



**IBM**®

**@server**®

IBM eServer xSeries systems are powered by Intel Xeon processors. (And they may very well cost less than you think.)

<sup>1</sup>CIO Insight, a Ziff Davis Media publication, January 2003 survey of almost 500 IT executives. <sup>2</sup>Additional charges apply. Standard support includes next business day response in some countries. IBM, the e-business logo, eServer, the eServer logo and xSeries are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. Intel, Intel Inside, the Intel Inside logo and Intel Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product and service names may be trademarks or service marks of others. © 2004 IBM Corporation. All rights reserved.



# Disposable IT DRIVES CAMPAIGNS

The 2004 primary campaigns demand fast and easy IT systems that deliver results like there's no tomorrow.

BY MARK HALL

ONE OF THE most striking aspects of this year's presidential primary race is the sudden importance given to candidates' IT operations. Everything from elaborate Web sites and aggressive online fundraising to e-mail campaigns and blogs have been embraced by virtually all of the candidates running for president.

And yet while IT professionals might assume that getting a campaign's IT operations up and running is a complex and time-consuming affair, what's most striking about these IT infrastructures is how quickly they're cobbled together — and then discarded. For better or worse, campaigns live in a world of disposable IT.

"Everything you use didn't exist a year ago," says Mike Liddell, director of Internet strategy for the Joe Lieberman for President campaign in Arlington, Va. "And what you've created was done in a short amount of time and has a short life cycle."

That means concerns about integrating with back-end systems or anticipating the long-term effects of choosing between an open-source technology or a proprietary approach just don't matter, since the life cycle of a presidential campaign is so short.

Unlike most businesses,

campaigns have a termination point, says Sean Kewley, vice president of Voter Solutions Inc., a Chicago-based supplier of database and voter analytic software. That's why they don't invest in an IT infrastructure loaded with network switches or high-performance servers. "Why would you, when you know that the organization is going to dissolve on election day?" he asks.

But if the IT organizations are more nimble than their corporate counterparts, they're

not necessarily more advanced. Jan Soulé, vice president of marketing at Campaign Superstore in San Jose, says she thinks presidential campaigns are far behind on current technology "because they only look at it every four years."

Her company offers Web site templates for candidates running for office, including Rep. Jim Gibbons (R-Nev.). With them, Soulé says, a candidate can get a professional-looking site for about \$1,000 — a reasonable amount to

spend on a system that will simply be cast aside at the end of the election cycle.

## Time to Market

Nicco Mele, webmaster at the Dean for America headquarters in Burlington, Vt., says he agrees that long-term IT thinking is detrimental to a political campaign. "What matters is how fast. It's a time-to-market environment," he says. So, like many corporations today, campaign IT organizations turn to outsourcing.

For example, Howard Dean's campaign makes heavy use of streaming video on its Web site but never gave a thought to developing any infrastructure for it in-house. Instead, the campaign relies on streaming media service provider Wavexpress Inc. in New York.

Throwaway IT operations also affect the kinds of people hired or accepted as volunteers inside a candidate's IT organization. It's vital to quickly get people who have similar skill sets because there's no time to train anyone.

The Lieberman campaign uses an all-Microsoft technology strategy, from Internet Information Server on the Web tier to Exchange for messaging and SQL Server for databases, because most potential IT staffers are familiar with those products, Liddell says.

For Dean's IT troops, however, adopting popular open-source technologies is the way

to go. His campaign's Web infrastructure includes Red Hat Linux, Apache Web servers and Bricolage, an open-source Web content management tool from Kineticode Inc. in San Francisco.

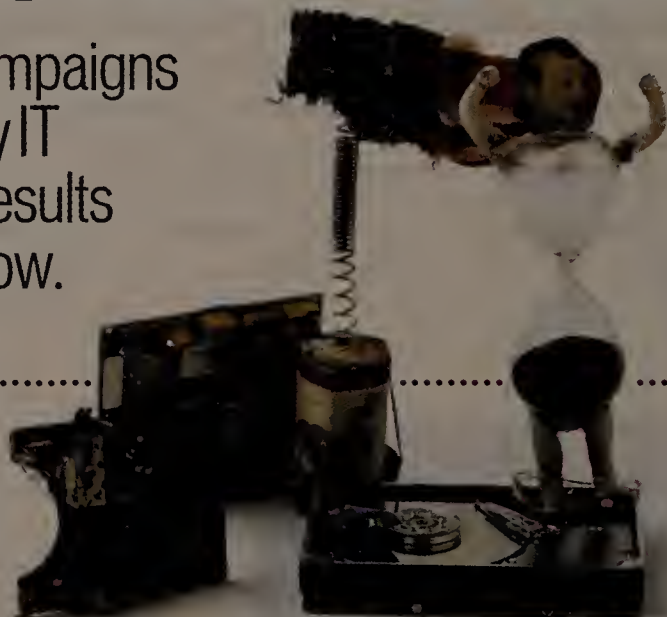
## Short-term Thinking

It's doubtful that politicians will change their attitudes about IT as a transient resource and think beyond their current campaigns. In many cases, the IT infrastructures and even the data are discarded.

Michael Badnarik is trying to get the nod as the presidential candidate for the Libertarian party and spent more than 30 years as an IT developer and consultant. He says the discarding of data reflects the time-critical nature of most voter information. "That's essentially the problem: It drops to zero after the election," he says.

For all the drawbacks, however, a disposable IT strategy that gets results quickly could transfer well to some corporate projects with short-term needs, such as on-site audits and targeted marketing efforts, say campaign workers.

And the approach of campaign IT organizations mirrors that of at least one type of business: companies that emerged during the dot-com boom, when time to market was everything. "It's like working in a start-up," Liddell says. **C 44011**



POLLY BECKER

## PAPERING OVER E-VOTING PROBLEMS

THE POLITICALLY PARANOID got even more nervous last year when researchers at Johns Hopkins University analyzed the code inside AccuVote-TS machines built by Diebold Inc. and found it flawed.

Avi Rubin, technical director for the Johns Hopkins' Information Security Institute in Baltimore, which evaluated the Diebold source code, says the company's developers used Data Encryption Standard, an outdated encryption technology, and "then they used it wrongly."

His team's research claims that smart cards used by voters to access the machines can be counterfeited, letting voters "cast multiple ballots without leaving any trace." Furthermore, security was lax enough to permit precinct workers to fiddle with the machines' vote tallies.

Rubin adds that the systems are also vulnerable when they communicate to "home base, both to fetch election configuration information and to report final election results." According to the research, Diebold's technology "[does] not use cryptographic techniques to authenticate the remote end of the connection nor do they check the integrity of the data in transit."

North Canton, Ohio-based Diebold has attacked the report as "inaccurate" and suggested that Rubin is biased because he consulted with a Diebold competitor. A Diebold spokesman also says that the researchers ignored local election certification processes that help secure the systems.

But Douglas Jones, a professor who studies election technology at the University of Iowa in Iowa City, says those processes are neither rigor-

ous nor well-enforced, especially when it comes to certifying technology.

He points to a study of Diebold systems in California that found that every county that used the systems ignored the proper procedures for certifying and registering the machines.

Both Rubin and Jones say the best way to ensure secure and accurate automated voting is with a paper audit trail. Indeed, some states have moved to provide election officials with a printed ballot for audit purposes. Voters could check the paper ballot by viewing it through a glass window.

Alan Martens, chief of communications for the Oregon Secretary of State, who oversees statewide elections, says, "Having a paper trail allows voters and poll workers to verify the results." **C 44011**



# ROBUST OBJECTS AND ROBUST SQL



## YOUR VISION OF A BETTER DBMS

For your next generation of applications, move to the next generation of database technology.

Caché is the *post-relational* database that combines high-performance SQL for faster queries and an advanced object database for rapidly storing and accessing objects. With Caché, no mapping is required between object and relational views of data. That means huge savings in both development and processing time.

Applications built on Caché are massively scalable and lightning-fast. Plus, they require minimal or no database administration.

More than just a database system, Caché incorporates a powerful Web application development

environment that dramatically reduces the time to build and modify applications.

The reliability of Caché is proven every day in “life-or-death” applications at thousands of the world’s largest hospitals. Caché is so reliable, it’s the leading database in healthcare – and it powers enterprise applications in financial services, government and many other sectors.

We are InterSystems, a specialist in data management technology for twenty-five years. We provide 24x7 support to four million users in 88 countries. Caché is available for Windows, OpenVMS, Linux and major UNIX platforms – and it is deployed on systems ranging from two to over 10,000 simultaneous users.



**Try a better database. For free.**

Download a free, fully-functional, non-expiring version of Caché or request it on CD at [www.InterSystems.com/robust](http://www.InterSystems.com/robust)





LAST FALL, some 40 management tool vendors formed the DCML Organization, a consortium committed to developing an open standard to facilitate interoperability and better integration between tools. Vendors say the evolving Data Center Markup Language will be critical to the development of utility computing and simplify life for data center managers. The first release of DCML is scheduled this quarter, with products adapted to the specification expected by midyear.

One of the leaders of the effort is **Tim Howes**, chief technology officer at Opsware Inc., a data center software automation vendor in Sunnyvale, Calif. He discussed the motivations for developing DCML and its technical challenges and potential user benefits with reporter Patrick Thibodeau.

**What problem is the DCML Organization trying to solve?** Over the past five to eight years, there has been a tremendous explosion of complexity in the data center. The problem is that the traditional management tools haven't kept up with that explosion. You have something doing monitoring, for instance, that needs to communicate with something doing provisioning.

Think back 10 years ago. There were relatively few servers in the data center. Those servers were relatively large, and they were running a relatively small number of applications, maybe in the dozens. Today, there are literally thousands of servers in data centers, as well as hundreds or thousands of applications running across those servers. The complexity of managing that has just gotten out of hand.

**Where are existing management tools falling short?** It's not so much that they are falling short. The problem is that no one company writes data center management software that solves the entire problem. Even if there were such a company, would you really want to put all your eggs in that basket?

**Where does DCML fit in?** There's a need to have all these management products communicate with one another, and that's what DCML is about — providing a common data format for exchanging information about the environment being managed between all of these different management systems.

**Can you give an example of how that would**

# MANAGING DATA CENTERS THROUGH XML

**work?** When you provision a new machine, you want to make sure that machine is monitored, so you need to communicate to your monitoring system that there's a new machine to be monitored. Today that happens, if you are lucky, by somebody leaving a Post-it note on the monitor of the guy who runs the monitoring system. But DCML allows that to happen in a more automated fashion. Similarly, that happens with security systems, backup systems — there are all kinds of different systems. DCML provides the vocabulary, the language if you will, for those systems to communicate with each other.

**How long is the list of applications and systems potentially affected by DCML?** The list is ultimately as long as the variety in the data center — any system that you are using to manage your environment. We're focused

on the data center because that's where we think the most complexity is, but the complexity actually extends beyond the data center to other environments as well, and there's nothing to prevent you from applying DCML to those environments.

**TIM HOWES**

**CTO**

**Opsware Inc.**

**Sunnyvale,**

**Calif.**

Howes is co-founder of data center automation software vendor Opsware, which helped found the DCML Organization. Previously, he was vice president of technology at America Online Inc. Howes holds a Ph.D. in computer science from the University of Michigan, is co-inventor of the Lightweight Directory Access Protocol and is a member of the Internet Architecture Board.

**What are the initial goals for DCML?** We're trying to create a standard data format that can be used to exchange information between automation and utility computing systems and traditional management systems. The use cases that we have in mind are: making sure provisioning systems can communicate with the systems that manage the machines that they provision; making sure those systems can communicate with the asset-tracking, inventory and billing systems that are responsible for keeping track of what's going on in the en-

vironment; and translating that into billing for customers or cost accounting for internal purposes. We want all these things to be able to communicate with one another.

**What technical challenges do you face?**

The biggest technical challenge is being able to deal with the level of diversity that's out there. Another technical challenge is to define DCML in such a way that it can be adopted incrementally so that neither vendors nor customers have to radically change their products or how those products are used.

**What kind of information must be exchanged, and in what format?** The format is XML-based. The information really falls into three categories. The first is the physical components themselves — the environmental information, such as characteristics of the server and networking gear. The second type of information, called the library, is the best practices and policies that you want. Finally, there is the blueprint, which shows how to combine those physical components in with the best practices that you specified in the library to produce an actual environment. DCML is not going to mandate the best practices. Instead, it will provide the mechanism to express best practices that would be different from one IT department to another.

**The big challenge in writing standards is often political — balancing competing vendors' agendas. Is that true here?** It's always a bit of a challenge. We've got an opportunity to decide whether we want to make a standard that's very useful on the ground and works or that satisfies the political winds of different players. Historically, the standards that are successful are the ones that stay focused on implementation and adoption. Success to me is not how many [vendors] sign up and say they are going to support the standard. Success is how many get it into their working code and then how many customers end up using it.

**Some big vendors, including Sun, HP and IBM, aren't involved with DCML. Can you succeed without their participation?** It's not at all surprising to me. The big companies are invested in their own proprietary technologies, and they often don't see it in their interest to migrate to an open standard until or unless their customers force them to do so. **Q 43764**





JOYCE HESSELBETH

# PRINTER Magic

**Coming: 3-D electronic parts from your ink-jet printer. By Todd R. Weiss**

**Y**OU'RE DRIVING across Iowa on a steamy, sunny Fourth of July weekend when the car dies and coasts to the side of the road, the victim of an electronic part gone bad inside the alternator.

Luckily, there's a 24-hour repair shop in Iowa City where they can "print" you a new circuit board on the spot using a specially equipped printer that sprays out layers of inklike polymers, with all the electronic connections and transistors laid out in the proper arrays.

A mechanic installs the part, and you're back on your way with a repaired alternator.

A wild dream? Not necessarily.

## FUTURE WATCH

Today, scientists at universities and companies are working on just such technologies, where specialized commercial ink-jet printers can be used to create 3-D parts using processes that spray liquid plastics, one layer stacked atop another, to build up a component.

So far, researchers are able to create small transistors using 3-D printing methods, while specialized industries already exist that can print prototype, one-off parts.

But while experimental transistors and prototype parts are being created separately today in labs, the technology still isn't here for printers to build

electrical circuits integrated into completed, working parts.

That technological jump could come in five or more years, says John Fitch, a mechanical engineer at Palo Alto Research Center (PARC) in California. "That's a vision I'm sure some people are trying out right now," he says. Eventually, technology that allows devices to print out 3-D parts with integral electrical capabilities could have limitless uses, replacing expensive silicon-based electrical components with parts made from cheap plastics.

The technical challenges are still large, however, including the potential need for many different kinds of materials to be printed, from plastics to steel to aluminum or even carbon fiber. "It means that everybody would have to have a printer that has lots of different cartridges or lots of different printers," Fitch says. "The chemistry of that is pretty complicated."

Rather than ending up as consumer items, such printers could ignite an industry in photocopying shops or other businesses where users could send a parts order by e-mail and pick it up or have it shipped to them, he says.

## Smart 'Paper,' Labels


Plastic Logic Ltd. in Cambridge, England, which today creates ink-jet-printed plastic transistors to make active-matrix backplanes for flat-panel displays, foresees a host of new markets for the technology.

"Absolutely we see the large markets in things other than in prototyping," says spokesman Cranch Lamble.

"We've got a road map to work on two things," he says. They are "electronic paper" video displays — thin, flexible display devices — and flexible, plastic "smart labels" that could be used on consumer products. Such labels would contain electronic circuitry that could trigger warnings to notify consumers when food in a package is no longer fresh or could include a dis-

## 3-D PRINTING RESOURCES

To get more information about 3-D printing and the research being done in this developing field of science, visit our Web site:

 **QuickLink 43973**  
[www.computerworld.com](http://www.computerworld.com)

posable timer on a container of hair dye to let the user know it's time to wash the dye out.

The actual creation, though, of replacement parts on demand will take much more engineering, he says. "I see that as a very long-term vision of the technology," Lamble says. "We want to enable others to think about what can be done with these devices."

Printable parts are also being worked on today by researchers at the University of California, Berkeley, where flexible, one-piece 3-D devices are being manufactured using ink-jet printers that build parts one layer at a time.

These experimental, proof-of-concept devices, some of which look like miniature ladders, can be stretched or compressed to enable motion, but they don't require any assembly. Called flexonics, or "printable flexure-based mechatronics," the structures are being developed with the possibility of someday adding gears and shafts and other mechanical components, as well as capacitors to store electricity, says Jeremy Risner, a UC Berkeley graduate bioengineering student who is working on the project with John Canny, a professor of electrical engineering and computer science.

"You can certainly imagine you could print out a whole drive train, if you can get the clearances," says Risner. "We want to print out functional devices."

Printing movable parts would be far harder than printing static components, of course. The idea of building printers that can churn out parts from various materials would be key to making it work, Risner says. "Ten different materials, even if they're 10 different plastics, is really cool to think about now," he says. "I think it's far-fetched now, but . . . [maybe] it's something that would be feasible."

Ultimately, there could be specialized consumer products made by ink-jet printing technology, says PARC's Fitch. "My kids would love a Lego printer" to create customized Lego building blocks for their construction projects, even including electrical capabilities in the blocks to have them operate robotically, he says. "There may be some markets where it's actually big enough" to be a commercial success, he adds. **43994**

 **My kids would love a Lego printer [to create customized Lego building blocks for their construction projects].**



# Stepping Up to Sarbanes-Oxley

When it comes to compliance, some aspects of meeting the law's requirements may fall to the IT security group. By Mathias Thurman

**M**OST information security professionals are probably familiar with at least one of the many recent regulations that have an information security element to them. For my company, the legislation of concern is the Sarbanes-Oxley Act, which has presented new financial accounting and reporting requirements.

I recently reviewed the law to see what the IT security group needed to do to ensure compliance. It was without a doubt the most boring document I've read in months.

Besides getting bored, I also came away confused because it offered no guidance on the related information security issues. After further reading, I decided that the most important part for my group is Section 404, titled "Management Assessment of Internal Controls." This section mandates that management attest to the effectiveness of our company's "internal control" structure and procedures for financial reporting. *Internal control* is an extremely broad term, but I translated this section to mean that the CEO will expect my group to have sufficient controls in place to ensure the confidentiality, integrity and availability of financial and other critical information. So I came up with an initial plan to ensure compliance.

Over the past few years, I've put together a series of information security policies, standards, procedures and guidelines. Some of these documents are published, others

are available to those who ask, and others are just sitting in a shared folder on our network.

I think we have enough infrastructure in place to satisfy most expectations of our executive staff and any auditor. But to make everyone's lives easier, I decided to standardize on a methodology for policies and standards called ISO 17799 — something many of

my peers are also doing. The ISO information security code of practice consists of a framework that provides guidance in creating strong information security.

The ISO framework consists of 10 main sections, with several subsections within each. First I created a table of contents, making sure that the expected ISO 17799-compliant headings were in place and that there was a place for every policy, standard and guideline that we have created over the past few years. Most of our documentation exists as either Microsoft Word or Adobe Acrobat files. Eventually I'd like to convert all of the

documents to HTML and create a hyperlinked set of documents where users can quickly navigate from a policy to the corresponding standard, guideline and procedures.

Even a well-organized set of documents doesn't ensure compliance with those corporate standards, however. Sarbanes-Oxley mandates that audit reports contain a description of internal controls testing and that we document our system of internal control. That presents a problem.

## The Auditor Issue

We used to have an audit person in the information security department, but after he resigned, we never replaced him. At the time we couldn't find a qualified candidate. Then, eventually we lost the requisition for that position, and the work he had been doing fell by the wayside. We do have a separate audit department, but it mainly focuses on financial matters, not IT security.

From my perspective, the important aspect of compliance is ensuring that the policies and standards we have created are followed and that we have a program to ensure that all departments are complying with the appropriate standards. This means that we have to take the time to revisit the standards we created to make sure they're up to date.

We started this work by scheduling meetings with each department in order to review documentation and ensure that it is current and being followed. We also looked at some of the work the previous IT security auditor had completed. Along the way we found an Access database that lets us enter audit items and track compliance and areas of concern.

Fortunately, there has been

an extension to the Sarbanes-Oxley compliance date, and that should give us the time we need to satisfy these audit requirements.

## Goals for 2004

While the Sarbanes-Oxley effort will consume much of my team's time for the next few months, I have a few other high-level initiatives in store for my group this year.

The first will be an identity management system that includes public-key infrastructure technology. The challenge will be identifying all of the applications that the identity management system will touch and ensuring that we make the right decision on which vendor's PKI system to use. Along the way we'll have to decide whether to install a certificate authority in-house or outsource that function.

Finally, there is still a lack of compatibility between PKI vendor offerings and other products. It's imperative that the system we pick be compatible with all of our applications and operating systems.

After that's completed, we will be looking for a new event-correlation tool. Our current product just isn't performing as well as we'd like, so we will look at several other contenders. In addition, we will be looking to install a remote scanning system to continually scan our infrastructure for vulnerabilities. Finally, we will begin installing a configuration and patch management tool to address inconsistencies within our environment.

We want to ensure that both our critical servers and individual desktops have consistent configurations and are up to date on patches for each environment. Those projects should keep us busy well into the new year. **43963**

## WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at [mathias\\_thurman@yahoo.com](mailto:mathias_thurman@yahoo.com), or join the discussion in our forum: **QuickLink a1590**

To find a complete archive of our Security Manager's Journals, go online to [computerworld.com/secjournal](http://computerworld.com/secjournal)

## SECURITY LOG

### Sarbanes-Oxley Resources

I've found the following Web sites helpful in understanding the IT security implications of the Sarbanes-Oxley Act:

■ The PCAOB-Online's Sarbanes-Oxley Web Site: [www.sarbanes-oxley.com](http://www.sarbanes-oxley.com)

■ The American Institute of Certified Public Accountants' Web site: [www.aicpa.org/sarbanes/index.asp](http://www.aicpa.org/sarbanes/index.asp)

■ The KnowledgeLeader Internal Audit and Risk Management Community is a subscription-based site, but you can sign up for a 30-day trial to review white papers, policies, articles and presentations related to Sarbanes-Oxley: [www.knowledgeleader.com](http://www.knowledgeleader.com)

— Mathias Thurman

### Security Bookshelf

*Malware: Fighting Malicious Code*, by Ed Skoudis and Lenny Zeltser, Prentice Hall PTR, 2003.

This is one of the best books I've read on dealing with malicious code. It offers common-sense explanations of terms and problems and goes into detail on areas ranging from hostile Java applets to steganography (communications hidden in digital files). If you have been affected by the rash of recent worms or just want to enhance your breadth of knowledge, pick up a copy.

— Mathias Thurman

Skoudis and Zeltser have written a fantastic book that contains all the passion and creativity Skoudis puts into his presentations for his SANS Institute courses. The book takes you on a tour of all the major forms of malicious code and many up-and-comers.

With technical staffs as enthusiastic and as skilled at communicating ideas as the authors, us good guys might just have a chance.

— Vince Tuesday

**SECURITY  
MANAGER'S  
JOURNAL**

“

**Sarbanes-Oxley mandates that audit reports contain a description of internal controls testing. . . . That presents a problem.**





Faster than Verizon.  
Faster than Sprint PCS.  
Faster than Cingular.  
Faster than T-Mobile.  
Faster than Nextel.



For the fastest way to open large e-mail attachments on a national wireless network, switch to AT&T Wireless.

It's a fact. No one offers a faster national wireless data network than AT&T Wireless with EDGE technology. No one. With average speeds of 100–130 Kbps, bursts of up to 200 Kbps and secure wireless access, you can browse the Internet as well as download presentations, documents and spreadsheets nearly twice as fast as with any other national wireless data network. We work with leading IT companies to help you get more out of the technology you use every day, across the U.S. High-speed national wireless data is here. And no one is faster at it than AT&T Wireless. Call 1 888-DATA-288 or go to [attwireless.com/speed](http://attwireless.com/speed)



Access the fastest national wireless data network with an easy-to-use PC card.

Open e-mail attachments at average speeds of 100–130 Kbps and bursts of up to 200 Kbps.

Download large documents, presentations and reports in just seconds.

Faster data speeds from more places in the U.S. than with any other wireless carrier.

reachout®  
on the wireless service America trusts™



AT&T Wireless

©2003 AT&T Wireless. All Rights Reserved. Requires credit approval, qualified minimum one-year agreement and rate plan, and compatible EDGE PC modem card. Actual download speeds depend on coverage, network availability and traffic device, applications, tasks, file size and other factors. Comparison based on published speed claims of national mobile wireless data networks. Not available for purchase or use in all areas. Coverage is subject to transmission limitations and terrain, system, capacity and other limitations. Secure wireless access refers to the authentication and encryption features available on the AT&T Wireless network. Additional restrictions apply. Service is subject to Terms and Conditions/Service Agreement and rate plan materials. All marks used herein are marks of their respective owners.



## BRIEFS

**AlterPoint Bundles Network Products**

AlterPoint Inc. in Austin last week announced its DeviceAuthority Suite, a bundling of three network configuration management products: DeviceAuthority Audit Module, DeviceAuthority Update Module and DeviceAuthority Server. Integrated Network Environment, a new tool in the suite, provides real-time integration and feed-back. Pricing starts at \$19,950 for 100 devices.

**Veritas Broadens Linux Support**

Veritas Software Corp. in Mountain View, Calif., has expanded its support for Linux by including SUSE Linux and VMware. Veritas said it now has a full complement of enterprise storage, data protection, high-availability and automated provisioning software on SUSE Linux and Red Hat Linux.

**Red Hat Updates Linux 3 System**

Red Hat Inc. in Raleigh, N.C., announced the first major update for its Enterprise Linux 3 operating system, adding features for Red Hat Network support subscribers. Those include performance enhancements for AMD Athlon 64 CPUs; improved support for IBM iSeries, pSeries, zSeries and S/390 systems; and support for new Intel Itanium 2-based systems. The updates are available free from Red Hat.

**NetScaler Offers New Switches**

NetScaler Inc. in Santa Clara, Calif., last week introduced the 9900 Secure Application Gateway and the 9950 Secure Application Switch. The devices are designed to optimize application performance and security in the Layer 4-7 traffic management market. The 9900 gateway sells for \$55,000, and the 9950 switch sells for \$90,000.

CURT A. MONASH

# Find a Successful Search Strategy

**T**EXT-SEARCH TECHNOLOGY is finally coming of age. Stand-alone search “solutions” can still be ludicrously bad: Monsanto’s top 10 hits for “fertilizer” lead to boilerplate legal disclaimers, Boeing’s top 10 hits for “jet fighter” feature discontinued aircraft, and Toyota’s top 10 hits for “Camry” are in Chinese. But when text search is integrated into a broader application framework, the story is much happier. Search is

a clear success in several specific niches, such as online retailing or regulation-driven document management. And as the means improve of integrating text with other kinds of data, a much broader range of text-aware applications is becoming practical as well.

Some of the more intriguing opportunities include:

**Upgrading your Web presence.**

Surely you already have a search capability on your Web site. But it could probably be a lot better.

**Upgrading your online documentation.** If you provide a lot of technical information online, it’s probably hard to navigate. Helping customers find what they need more easily can save both them and you a lot of money. Effective text search is crucial in this effort.

**Navigating applications more easily.** Large e-commerce sites are often best navigated via text queries such as “John Grisham” or “red turtleneck sweaters.” The same may be true for back-office systems such as merchandising or purchasing.

**Helping your people find one another.** Suppose an employee searches for information on a subject and finds vaguely relevant information written by a colleague. There’s a good chance that talking with this person will help your employee find out what he needs to know. Not only is such expertise-finding invaluable in global engineering and consulting organizations,

but it also can be helpful in figuring out how to approach particularly tricky or important sales challenges.

**Digging into text mining.** You probably have a wealth of text and even voice records pertaining to customer contacts — service call reports, call center reports, sales call reports, customer letters and e-mails, even recorded phone calls or chat sessions. Analyzing these could turn up crucial information

about customer segmentation or about product strengths, weaknesses and flaws. It’s a gamble, because you don’t know how much you’ll really find — but just like the original form of data mining, it’s a gamble worth taking.

All of these application scenarios depend on text being related to other kinds of data. In unaugmented text search, documents are searched for words and phrases, which are then used to assess the subject of a document. However, linguistic techniques alone aren’t enough to produce satisfactory results. This is why pre-Google search engines all failed; until Google came up with an effective way to use extra, nonlinguistic information, the Web search relevancy problem simply couldn’t be solved.

Google’s solution — looking at a page’s “link popularity” — isn’t applicable to most corporate search environments. However, enterprises have access to plenty of other extratextual informa-

tion. Documents can be tagged by date, author, subject and, above all, intended audience and purpose. Customer communications can be associated with tremendous amounts of customer and product data. Most of this information is best stored and communicated via SQL, Lightweight Directory Access Protocol (LDAP) or XML.

The key point of integration between text and these other kinds of data is a full-featured database management system. IBM and Oracle both support “WHERE CONTAINS” syntax, letting text searches and normal relational queries be joined in a single SQL statement. And since SQL systems these days can also talk XML and LDAP, those integrations are provided as well. Text-specific features are still missing from application development tools, but that’s not crucial. Since relational database management systems stuff an entire document into a binary large object field, generic SQL building technology is usually all a programmer needs.

What’s trickier is integrated administration of text and tabular data. Text search relies on specialized text indices, which are huge, sparse and generally a lot like bit maps. Integrating text (or bit map) indices into relational databases is far from trivial.

Fortunately, however, Oracle and IBM are pretty far along in text/relational integration, with Oracle being somewhat ahead of IBM. Microsoft, which has long lagged behind, pledges to narrow the gap soon.

So should you incorporate text search in the applications you build or buy? For most enterprises, the answer is yes. Text data is obviously pervasive and important. The cost of integrating text with other data types is manageable. Text-search boxes are a major form of user interface. If you don’t have a text strategy, you’re probably not getting the most out of your IT opportunity. **44141**



CURT A. MONASH is a consultant in Acton, Mass. You can reach him at [curtmonash@monash.com](mailto:curtmonash@monash.com)

**WANT OUR OPINION?**

For more columns and links to our archives, go to [www.computerworld.com/opinions](http://www.computerworld.com/opinions)



## Closing the Deal

GE Real Estate has automated most of the front-end processes on commercial real estate deals, and that has led to shorter cycle times and higher volumes. **Page 38**



## Q&A SIM Focuses on Advocacy

Nancy Markle, the new president of the Society for Information Management, lays out her three-part agenda: awareness, chapter growth and the creation of alliances for legislative advocacy. **Page 40**



## OPINION The Top Five Issues for CIOs

Barbara Gomolski says Sarbanes-Oxley compliance, outsourcing, security, project prioritization and cost management are the hottest issues that CIOs will face this year. **Page 42**

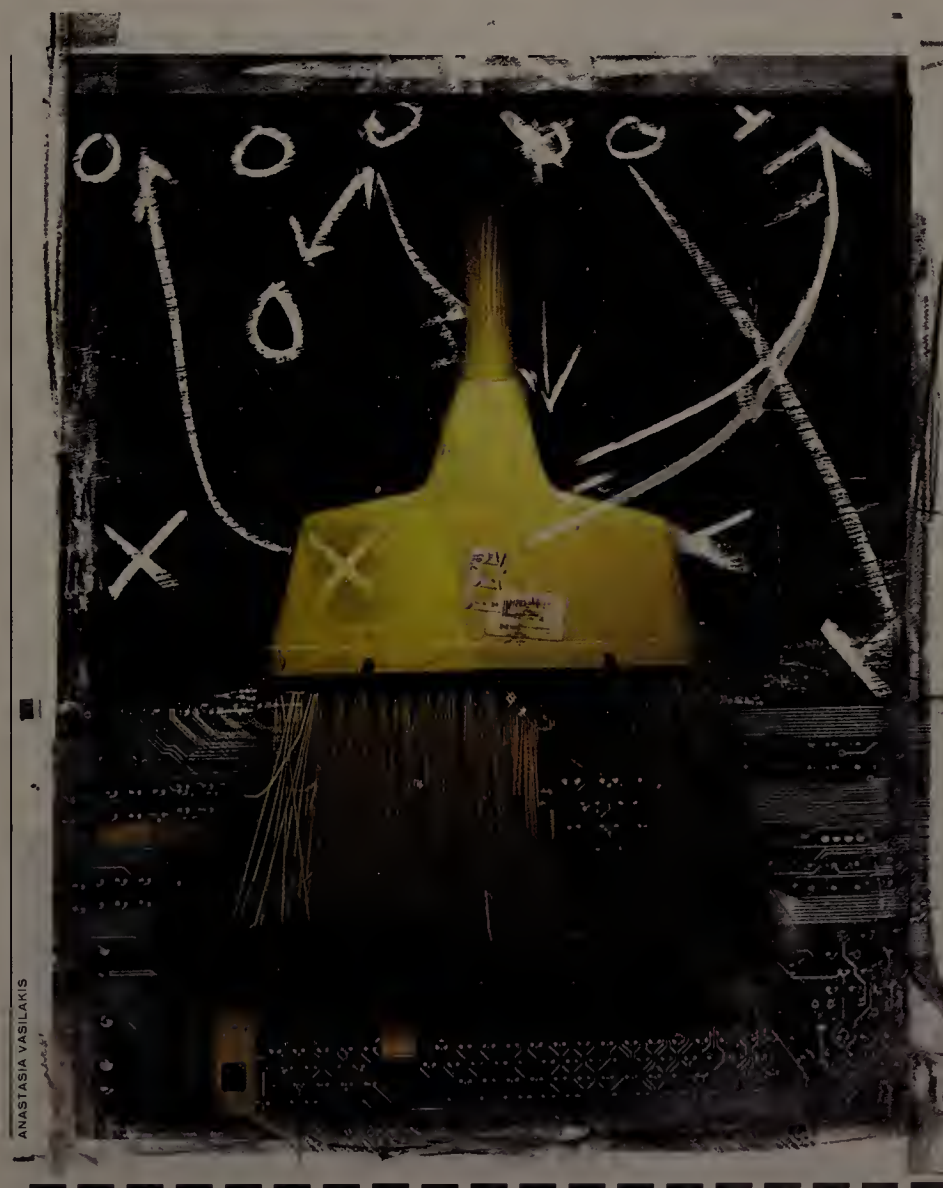
Here are  
four proven  
strategies for  
identifying  
and clearing  
out costly  
shelfware.

BY JULIA KING

**R**ESearchers estimate that seven out of 10 companies have little or no idea who exactly uses the software deployed throughout their businesses. Many of these companies are equally clueless about what their software portfolios include and whether the applications have actually been installed or remain shrink-wrapped and collecting dust on cubicle shelves.

In 1999, U.S. corporations wasted \$90 billion by buying IT assets they already owned, buying the wrong technology and making unnecessary payments for returned and retired hardware and software assets, according to Meta Group Inc.

Five years later, the same problems remain rampant. Gartner Inc. estimates that most companies typically have about a 30% discrepancy between what they think is in their IT inventory and what they really have. Yet many still fail to collect and integrate software usage data into their overall IT management plans. Consequently, U.S. businesses continue to overbuy licenses for 60% of their software portfolios and are noncompliant on another 30%



ANASTASIA VASILAKIS

# SOFTWARE Sweep



of their software assets, Gartner says.

But poor IT asset management isn't the only culprit. So-called shelfware can accumulate as a result of canceled or scaled-back projects, corporate downsizings, decentralized IT purchases, a failure to adequately train and subsequently monitor users or a failure to buy the right technology to begin with.

Here are four proven tactics for identifying and clearing out shelfware, plus leveraging the software you have to yield maximum business value:

**1 PURCHASE JUST IN TIME.** Buying only the software you need — and only when you're ready to use it — sounds simple enough. Yet vendors' offers of hefty volume discounts, sometimes as high as 50%, frequently induce companies to buy ahead for projects still in the planning stages or to buy more licenses than they immediately need as a way to accommodate future growth. Neither option is a good deal, experts say.

"It's a time-delay issue. The more you buy, the better the deal you get upfront, but the more maintenance you pay down the road," says Gartner analyst Scott Nelson. He notes that vendors usually peg maintenance fees to list prices, not discounted prices, and the fees kick in immediately, regardless of whether the software has been installed. The upshot is that the long-

term savings are negligible.

That's one big reason CIO Jim Jackson says he doesn't purchase software suites for his company, Intertape Polymer Group Inc. in Bradenton, Fla. Instead, Jackson and his IT team identify the specific requirements of a user group and then buy an off-the-shelf software package that meets 70% to 75% of those requirements.

"That way, I achieve immediate benefit on the implementation of that product," he explains. "I then look at the remaining requirements and, in most cases, I can go out again and buy another off-the-shelf package and bolt it on and achieve up to 90% of the original requirements. I've never had to go more than one iteration beyond [the original package]." The result: "I don't have software sitting on the shelf," Jackson says.

**2 HIRE A SOFTWARE EVANGELIST.** "You have to put someone in place and make them accountable for watching over an application to make sure it has a business impact," says CIO Rich Bursek at Lydian Trust Co. in Palm Beach Gardens, Fla.

Lydian recently implemented a multimillion-dollar IP telephony system from Cisco Systems Inc., and Bursek hired a dedicated person whose job is to make sure that users leverage all of the system's features. The evangelist

also conducts ongoing training and looks for additional ways to integrate the new IP telephony system with existing software.

Bursek also hired an evangelist for Lydian's deployment of enterprise business intelligence and reporting software from Crystal Decisions Inc. Because evangelists feel they have ownership of their particular applications, they tend to be passionate about their use, Bursek says.

But constant vigilance is also critical. Almost two years after completing a new \$10 million customer service and call center system, PacifiCorp, a Portland, Ore.-based electric utility, continues to monitor employees' usage and gather their feedback about the system as a way to gain maximum business value from it.

"After a system goes in, we monitor who's using it and ask if they need additional training and hold focus groups to see what changes they'd make," says Jann Davis, director of systems development and asset management.

One of the initial goals of the system was for PacifiCorp's 325 call center agents to handle 80% of incoming calls in less than 20 seconds. This entailed scripting responses tailored to the types of calls that typically came into the company's two call centers. But keeping the team to the 80/20 rule was a problem because certain team members wanted to script responses for the rarest types of customer requests, says Davis. "I had to keep pointing out we didn't need a Ferrari," Davis says.

**3 CHARGE FOR SOFTWARE USAGE.** If only one or two departments use a software application that costs, say, \$500,000 a year in license and maintenance fees, shift the expense to those departmental budgets, suggests Dave Dworkin, director of product management at Isogon Corp., an asset management software and consulting company in New York. "We see these types of applications all the time," he says. "And it's amazing how quickly the department can do without the application."

A variation on this pay-your-own-way model is in place at Houston-based BMC Software Inc., where all software purchases are approved by IT but are paid for by individual departments. "If someone wants a new application, they come to IT and ask for it, but they come with their checkbook,"

**42%**

of software assets are unused, according to a recent study by Gartner.

says CIO Jay Gardner. An added benefit of BMC's centralized buying and strict IT governance model is a much more accurate picture of the company's hardware and software inventory and overall IT infrastructure usage.

"To control costs, you need a good understanding of which applications are

using which servers, network components and databases. IT and CIOs have been forced to be more cognizant of this issue because they're much more accountable for the money they spend," Gardner says.

On the other hand, Lydian's Bursek says a decentralized IT buying model can also keep departments from overbuying software or buying software that languishes unused. At Lydian, each business unit has its own technology group and its own profit-and-loss responsibility. "They don't want to overbuy because it has a direct impact on their P&L," Bursek says.

**4 REUSE AND RETIRE.** Business departments seeking a new piece of software at The Vanguard Group Inc., a mutual funds giant in Valley Forge, Pa., take their requests to the so-called tech team, through which all IT acquisitions are made. Reusing standardized software already in place is the team's top priority. "If a [user] group wants an ad hoc reporting tool, we'll go through our [enterprisewide] inventory of applications, and if we have a standard tool in place, we tell them what it is and what it does. Then their job becomes knocking out the incumbent software," explains John Mercante, a principal who heads Vanguard's technology operations. Replacing software is a zero-sum exercise at the company. Multiple software tools and applications that do the same thing simply aren't tolerated, he says.

That's why retiring software is just as important as buying it, Mercante emphasizes. In 2002, Vanguard retired 87 software products when better ones came along to take their place. In 2001, it retired more than 100 applications. The company also has a dedicated program manager of software retirement.

"Pulling the plug is a very key metric for us," says Mercante. "We constantly look at what we brought in and what we've retired. It pays huge benefits, but you have to control monitoring and accountability." **43585**

## Where and When to Start

Companies that launch a comprehensive software asset management program can expect to save 8% to 30% of their total software budgets, according to Dave Dworkin, director of product management at Isogon. Best of all is that the bulk of savings are located in one convenient place — your corporate mainframe.

"It's tempting to start an asset management program with desktops because everybody thinks that's the biggest problem, but it's not the area of immediate savings," Dworkin says. "It's much better to start with the mainframes because you know where

they are and you have full-time systems administrators who can go after them."

Dworkin also says the best time to start a software asset management program is when a new CIO or CEO comes on board. "Those people don't have a history. It's their job to come in and get a jump-start." In contrast, he says, veteran CIOs can be defensive about launching an aggressive software asset management program. "A lot of them see it as [an effort] that's going to definitely prove they haven't been doing a good job for the past five years," Dworkin says.

— Julia King



# A Railroad FINDS ITS VOICE

**New system turns radio messages from the locomotive into shipment-tracking data for managers and customers. By Bob Brewin**

ANY CASUAL SHIPPER can tap into a FedEx or UPS Web site and determine the location of even the smallest of packages. But until recently, The Burlington Northern and Santa Fe Railway Co. (BNSF) tracked its trains the old-fashioned way, through two-way voice radios located in every locomotive cab.

Train crews dropped off cars and then radioed that information back to a dispatcher at BNSF's high-tech network operations center at the railroad's headquarters in Fort Worth, Texas. The dispatchers would then have to type these reports into DB2 databases running on IBM mainframe computers.

Though BNSF could communicate with train crews over engine-cab radios hooked into a private microwave system that spanned 14,000 miles in 27 states, the system provided "static information," according to John Hicks,

BNSF's director of unified messaging. Crews would start their day with written work orders and turn them in at the end of the day — with periodic calls to report cars dropped off or picked up. Jeff Campbell, BNSF's CIO, viewed this approach as outdated, cumbersome and incapable of meeting

the demands of customers and railroad management for near-real-time data. Last year, BNSF launched a project to automatically turn those voice radio calls into data capable of integration into the company's computer systems.

Campbell says BNSF decided to use its voice radios as the interface to an interactive voice response system and tapped ScanSoft Inc. in Peabody, Mass., to provide it with speech-recognition software. ScanSoft had never integrated IVR with a radio system before, and the company found it a challenge, said

Rob Kassel, ScanSoft's senior product manager for network speech.

That's because two-way radio systems have lower fidelity than the phone lines traditionally used with IVR. The fidelity problem was compounded by the noisy environment of a locomotive cab, Kassel adds. ScanSoft built the BNSF IVR application on its SpeechWorks software and added noise filters. ScanSoft also sampled engineer radio calls to teach the software to recognize speech generated in such a noisy environment.

Although this is an unusual application of an IVR, Dan Miller, an analyst at Zelos Group Inc. in San Francisco, says radio-to-data interfaces are the next frontier for IVR systems. There's a "huge growth potential" within many industries, including trucking, utilities and field service fleet firms, he says.

Once ScanSoft completed its work, Campbell says, BNSF integrated the SpeechWorks software with an IVR platform from Intervoice Inc. in Dallas and a digital radio interface from Telex Communications Inc. in Burnsville, Minn. Beth Bonjour, assistant vice president of technology at BNSF, says the railroad then wrote the middleware to integrate what the company calls the Radio Telephony Interface (RTI) into its systems.

Dispatchers at BNSF's network operations center control the RTI through a phone icon on their screens, Hicks says. This shows all the radio frequencies as well as cell phone and landline connections. When a train crew calls in, the dispatcher clicks on the appropriate link, and the RTI takes the crew through an interactive audio menu with prompts for information such as car number and location.

BNSF rolled out the RTI in its Fort Worth division last year and plans to take it systemwide by 2005, starting with its Gulf and East Texas divisions this year, Campbell says. He declines to break out the cost of the RTI but says BNSF's IT budget will hit \$274 million this year, up \$1.5 million from 2003.

The result, Hicks says, is a system that automatically integrates radio calls with back-end systems, providing BNSF with a level of visibility into its trains and individual cars it never had before. Campbell says this "improves customer satisfaction" by allowing BNSF to update its Transportation Support System in near real time. The RTI allows BNSF to provide customers with more frequent information on car moves "and closer expected time of arrival," Campbell says. **43987**



A BNSF coal train

## A BIG TRAIN SET

Burlington Northern Santa Fe has started to deploy a wireless-LAN-based Remote Control Locomotive (RCL) system to all its switch engines, in hopes of boosting efficiency and cutting accidents.

BNSF uses the switch engines to make up trains in its rail yards. This involves coupling cars to the switcher, moving them from one track to another and then coupling them to the new train. This has traditionally been managed by a conductor on the ground, communicating via radio or hand signals with an engineer in the cab — and it's a recipe for accidents, according to BNSF CIO Jeff Campbell. The conductors can't see the engineers in the locomotives and vice versa, a situation that sometimes results in bone-crushing injuries.

BNSF started last year to replace these two-person switch crews with one-person RCL systems, which consist of a belt-pack device worn by a yard worker that mimics all locomotive controls — including the horn — and is hooked up by a WLAN link to a controller in the unmanned cab.

BNSF uses RCL systems from Saint-Laurent, Quebec-based CANAC Inc. and the Erie, Pa.-based GE Transportation Systems division of General Electric Co. The CANAC WLAN operates in the licensed 450-MHz band, while the GE version operates in the unlicensed 900-MHz band.

Though RCLs might seem hazardous, Campbell says that in 10 years of use on Canadian railroads — which pioneered RCL — yard accidents have dropped 40%. The RCL belt pack has built-in safety features, including a tilt mechanism that shuts down the locomotive if the operator bends by more than 45 degrees.

BNSF currently has 220 switch locomotives equipped with RCL. The railroad expects to have all its switch engines equipped with RCL by 2005.

Campbell says that, besides improving safety, RCL has already started to pay off on the bottom line. "We can build a train faster with one person than two, and we don't need switch engineers any longer," Campbell says. The switch engineers are all being offered jobs on long-haul freights, he adds.

— Bob Brewin

### CASE STUDY



's network operations center in Fort Worth, Texas



**T**HE IT ORGANIZATION at GE Real Estate has automated most of the front-end processes for commercial real estate financing, which means employees can close deals faster and move on to the next ones.

That's important because, while most of the U.S. economy has been sputtering over the past three years, the commercial real estate sector has been white-hot. Prices for shopping malls, office buildings and industrial complexes have shot through the roof with intensified competition.

"It's very competitive out there, and with interest rates being low, we have to work harder to be competitive," says Michele Gabriele, director of North American technology at GE Real Estate, a division of GE Commercial Finance, one of four finance arms of General Electric Co.

Not that GE Real Estate had been underperforming. In 2000 and 2001, the company's earnings grew 24% and 25%, respectively, according to GE's annual reports. "Our business was doing well without much use of technology, but there were real opportunities to improve through automation," says Hank Zupnick, GE Real Estate's CIO.

Historically, many of the activities at GE that support commercial real estate financing deals were conducted manually, like calling or faxing in the details of an engineering report and entering them into the deal binder, says Zupnick. Whenever the status of a deal had to be updated, that would trigger a flurry of phone calls and faxes among 15 to 20 people, including salespeople, underwriters, appraisers and credit risk managers, says Gabriele.

In 2001, GE saw an opportunity to automate the lion's share of those activities while making the sales cycle more efficient and accurate. That year, the company began developing a customized, browser-based system using deal management software from New York-based CapitalThinking Inc.

The Java-based system, which GE calls RE Source, electronically captures most of the information that goes into a commercial real estate deal and makes it available online to key participants. That has cut costs and shortened the sales cycle for deals in the \$10 million to \$100 million range by 10% to 20%, says Zupnick.

"Thanks to this technology, we've been able to underwrite 25% more deals and remove \$8 million to \$9 million in expense each year for the past two years with the same amount of staff," Zupnick says.

Although it's tough to quantify the precise impact the seven-figure IT investment has had on the company's revenue, Zupnick says that the system paid for itself within a year. In addition, GE Real Estate's earnings rose 23% from \$650 million in 2002 to \$845 million in 2003,

according to Dan Smith, senior vice president of the North America Debt group in Dallas.

"The revenue side is a lot trickier to measure, but we hear a lot of people in the company saying we wouldn't have been able to do as many deals and do them faster than we could two years

#### AT A GLANCE

### GE Real Estate

Stamford, Conn.

#### Primary business:

Commercial real estate debt and equity financing

**Size:** Nearly \$28B in assets

**Employees:** 6,000

ago," he adds.

"The bottom-line impact is more apparent from a productivity standpoint" than the top-line gains are, says Smith.

For instance, GE salespeople used to travel more often to get needed changes and approvals on deals, says Gabriele. By

creating a collaborative system where approvals can be done electronically, she says, salespeople "are freed up in the field to work on the next deal."

Zupnick acknowledges that competitors such as Royal Bank of Canada and J.P. Morgan Chase & Co. have invested in comparable systems. Indeed, com-

mercial real estate management has become much more automated than it used to be, says Thomas Glendening, president of Front Street on the Hudson LLC, a Newburgh, N.Y.-based developer of distressed commercial properties.

"Even at a conventional level, what used to take weeks and months for financing approval can now be done in hours," says Glendening.

Investments in GE's RE Source project included adding Oracle database licenses; adding Sun Microsystems V880 Unix servers for testing, staging, production and backup systems; and hiring a few Java programmers and cross-training some veteran IT workers on Java, says Gabriele.

The core system was customized by GE development teams in Stamford, Conn., and Dallas, and by CapitalThinking. It is used by about 1,000 people and includes workflow, document management, reporting and e-mail notification capabilities.

When the system went live in January 2002, 10 people from both CapitalThinking and GE were working on the project. Now nine GE staffers provide support and additional enhancements to RE Source.

Zupnick and Gabriele's team brought in end users from a variety of departments early on and asked them how the system could be enhanced to make them more productive. Getting business peers to free up their time to work on the system "is often one of the biggest challenges," says Zupnick. But he and Gabriele were able to gain their commitment by highlighting the benefits of the system.

For example, RE Source uses color-coded fields to reflect a deal's status, such as whether the financing terms have been proposed or accepted. And if a deal gets approved, says Gabriele, salespeople are automatically notified on their BlackBerry devices. GE salespeople can send and receive information about a pending deal using their BlackBerries, but they can't approve deals using their mobile devices, says Zupnick. GE will consider adding that feature next year.

GE schedules four updates to the system each year. Current work includes incorporating an enhanced version of the system that's used in Japan to make it easier and faster for salespeople to prescreen potential deals, says Gabriele.

Whatever enhancements do come, Zupnick sees them as affirmation of a successful project. "That the business is continuing to invest in technology is a validation of our work." **44009**

# Closing THE Deal

**A JAVA-BASED SYSTEM ENABLES GE REAL ESTATE TO UNDERWRITE 25% MORE TRANSACTIONS PER YEAR.**

**BY THOMAS HOFFMAN**

**“Our business was doing well without much use of technology, but there were real opportunities to improve through automation.”**  
HANK ZUPNICK

**“It's very competitive out there, and with interest rates being low, we have to work harder to be competitive.”**



Middleware is Everywhere.

Can you see it?

IBM

Lotus.

Key

1. Shares credit rating. Now.
2. Responds to mortgage broker. Now.
3. Confers with local branches. Now.
4. Approves loan with supervisor. Now.
5. Does it all on one platform. Now.

**MIDDLEWARE IS IBM SOFTWARE.** Software like IBM Lotus® Workplace. An innovative platform based on open standards that combines multiple collaborative applications in a single, dynamic work environment. It's one workplace tuned to individual roles. For real-time collaboration. Real business value. Flexible too, it leverages IBM Lotus Notes™ @business on demand™ at [ibm.com/lotus/middleware](http://ibm.com/lotus/middleware)

IBM, the IBM logo, Lotus Notes, the @business on demand logo and trademarks or trademarks of International Business Machines Corporation in the United States and other countries. © 2005 IBM Corporation. All rights reserved.



# SIM Focuses On Advocacy

## New president of CIO group seeks alliances to lobby on legislation.



**Nancy Markle** this month starts her one-year term as president of the Society for Information Management (SIM), a Chicago-based professional association that provides resources and programs to help IT leaders develop their

management skills and enhance their business knowledge. She has worked as a consultant and was formerly CIO at Arthur Andersen LLP. Markle spoke with Computerworld's Jean Consilvio about what she hopes to accomplish in the coming year and what CIOs can gain from being members of SIM.

**Has SIM membership increased?** It's been growing by about 5% to 10% a year. We've got about 70% CIOs/DIOs [direct reports to CIOs] and senior IT leaders, and 30% are thought leaders, academicians, that type of thing.

**What are thought leaders?** We look at people who are in consulting or other areas, such as vendors and vendor partners. We select those who we think are going to contribute to the IT industry.

**How has the group's demographics changed?** [About six or seven] years ago, we set as a goal to make it about 70% on the CIO level and to move out of a vendor-type of relationship into a more partner/thought-leader type of relationship. We're there and intend to keep it that way.

**How's meeting attendance?** [At] our last national conference in New York, we had 600 people attend. It really depends on what it's all about. If you have good speakers and really excellent topics, they will come because they can learn. There might be a chapter meeting that isn't well attended, and it probably was because the interest level wasn't there.

**What are your priorities for this year?** I have three areas of focus. One is increasing awareness of what we're about and the advocacy areas. The second is helping the chapters in terms of supporting them, new-chapter development and helping the existing chapters learn from each other as well as getting support from the executive committee.

The third is the evolution of SIM — the growth of CIOs, collaboration partners and helping all of us to be better. We're talking to other groups that are trying to do similar things for their industry, like FEI [Financial Executives International], about some collaboration. We've already done webcasts together, and we're talking about joining on advocacy and other things.

**How are you bringing in new blood, other than the Regional Learning Forum students, who are members only while they're in that program?** We invite CIOs as potential members to attend regional conferences, so as they learn about the advantages of being a member and what that brings to their careers and companies, their interest is piqued. That's where we get a lot of additional membership.

**What are three significant things a CIO at a large company can get out of being a member of SIM?** The No. 1 is networking with other CIOs and finding out their successes, challenges, who they're working with, finding out those who are doing the same type of projects.

And there are learning opportunities

at the conferences, meetings and through the special education programs we have. We just started the Strategic Business Leadership Program because we're finding that the No. 1 area of interest is the alignment between technology and the business. CEOs have told us that they want their CIOs to talk to them in business terms. They want to know the ROI and potential challenges from a business perspective. They don't particularly want to talk about technology; instead, they want to talk about how their business will change and grow and prosper as a result of changing the way they do business through technology.

## Society for Information Management

**HEADQUARTERS:** Chicago  
**WEB SITE:** [www.simnet.org](http://www.simnet.org)  
**CHAPTERS:** 30  
**MEMBERS:** 3,000  
**LENGTH OF MEMBERSHIP:**

1-5 years	77.4%
6-10 years	13.6%
11-20 years	8.7%
20+ years	0.3%

### A SAMPLING OF PROGRAMS

■ **SIM Regional Leadership Forum:** CIOs, DIOs and senior managers who they think are going to be leaders in the IT field.

■ **Strategic Business Leadership Program:** Participants hear the perspectives of experts on business issues relating to technology issues and learn what others in a particular industry are doing.

■ **Advanced Practices Council:** A research team that will be looking at research and development for the future of the IT industry.

The last thing is about giving back and making the IT profession better, being more proactive in advocating things [in the public policy field] that will help the industry.

**What legislation might SIM be involved in this year?** There's a lot of legislation coming down, like Sarbanes-Oxley, privacy and HIPAA regulations.

**But can SIM help?** We research the legislation that's coming down and look at the potential problems with it. It sounds good on paper, but when you go to implement it the way it's written, it might be pretty onerous. Where if it's written slightly differently, you'd get the same effect, but you wouldn't have a great deal of money and time being spent by an organization trying to implement it.

On the other hand, if there looks like there's legislation coming in that we don't think is in the best interest of the technology community, we'll try to see what we can do about changing that legislation or defeating it. An example of that would be the UCITA last year. And we are absolutely looking at Sarbanes-Oxley.

### How do you investigate looming legislation?

We have a vice president for advocacy and communities of interest who is on our board. We poll the membership and see who is interested in that particular legislation. We form a group, and we use the SIM Web site to make it available to the membership at large. That group researches it and comes up with recommendations for SIM. We send that out to the chapters for feedback.

In some cases, we'll align with other organizations that are doing similar research. We aligned with AFFECT [Americans for Fair Electronic Commerce Transactions] for UCITA. With Sarbanes-Oxley, we may be aligning with FEI, but that's not definite yet.

**Do you think CIOs have lost credibility with their CEOs and CFOs?** I don't think they've lost credibility; I think the credibility is spotty. At our national conference, Dick Nolan, who is a Harvard professor, said that boards are beginning to have a fourth major committee, [called] technology oversight. FedEx has it; a number of banks have them. I think what you're going to be seeing over the next year is more demand on the CIO's relationship with his peers, more demand by the board for the CIO to be visible and explaining what's going on from a technology perspective. ☎ 43995



Middleware is Everywhere.

Can you see it?

2

1

4

3

5

IBM

#### Middleware

#### Key

1. Automatic overview of operation.
2. Automatic shipping of sale.
3. Automatic identity verification.
4. Automatic updating of inventory.
5. Automatic tracking of delivery.

**MIDDLEWARE IS IBM SOFTWARE.** Powerful software like Tivoli®, DB2® and WebSphere® Open, behind-the-glass technology that can automate it all – IBM, Microsoft®, Oracle, Sun. Problems are foreseen and solved before they occur. IT resources are directed to core business needs. Costs are significantly reduced. It's automation. On demand. And it's what keeps companies and customers happy. Very happy. **@business on demand™** at **ibm.com/software/automate**

IBM, DB2, Tivoli, WebSphere, Open, and @business on demand are registered trademarks or trademarks of International Business Machines Corporation in the United States and/or other countries. Microsoft, Oracle, and Sun are registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. Other company, product and service names may be trademarks of their respective owners. © 2003 IBM Corporation. All rights reserved.



## BRIEFS

## Midwest Bank Hires Security Exec

Kurt A. Troyer has joined Midwest Banc Holdings Inc. as vice president and information services security officer. He will lead security efforts for e-mail, data processing and related IT systems across Midwest Banc and its four subsidiaries. He also will be responsible for setting policies and security standards as well as the auditing of operations at the Melrose Park, Ill.-based bank holding company. Troyer most recently was vice president of IT at Covest Bank NA in Des Plaines, Ill.

## Automotive Lender Promotes CIO

Onyx Acceptance Corp., an auto lender in Foothill Ranch, Calif., has promoted its CIO, Todd Pierson, to executive vice president and chief operating officer. Since 1999, Pierson has been responsible for all IT systems, applications and communications. In his new role as COO, he will have the added responsibility of all loan servicing operations. Pierson started his career 18 years ago as a systems engineer at Hewlett-Packard Co. In 1991, he joined Ceridian Tax Service.

## NPR Names CIO



National Public Radio, a nonprofit radio service in Washington, has hired Robert G. Holstein as CIO. He will manage the communica-

tions systems and IT infrastructure that support more than 700 employees in 36 locations worldwide. He will also be responsible for creating processes for IT investment and sourcing. Holstein has 23 years' experience in communications and IT. He most recently spent seven years as business information officer at Capital One Financial Inc., where he built the infrastructure for the telecom businesses the credit card issuer owned from 1995 to 2001.

BARBARA GOMOLSKI

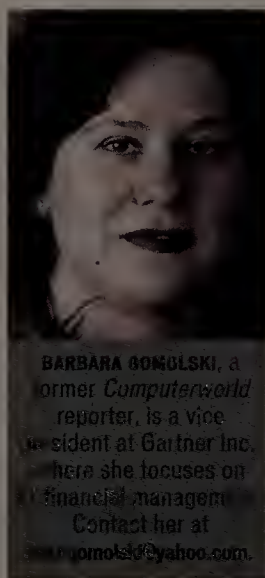
## The Top Five Issues for CIOs

**A**LTHOUGH many of us are looking forward to this new year with an eye toward the improving economy, it's shaping up to be a challenging one for IT managers. Here are the most important IT management issues that CIOs will confront in 2004:

**1. Sarbanes-Oxley.** While the Sarbanes-Oxley Act is mainly about accounting reform, it will have big implications for IT organizations in the coming year. In the first phase of Sarbanes-Oxley projects, already well under way in most companies, IT has been asked to work closely with finance and outside auditors to catalog existing financial reporting systems. (If the IT group isn't involved at this stage, that's a red flag.)

To date, finance departments have taken the lead on Sarbanes-Oxley compliance, and IT departments have been participating from the sidelines. However, you should expect the IT organization's involvement to grow as this megaproject moves to the next level. Better yet, get involved in Sarbanes-Oxley compliance efforts in your organization now, so you won't be blindsided by the requirements for the budget and labor resources you'll have to apply to this initiative. What's more, your participation at the early stages will greatly improve the chances that your company will ultimately succeed in its efforts to comply with the legislation.

**2. IT sourcing.** How and where will you get your IT organization's work done? That's a question many IT leaders will grapple with in the coming



BARBARA GOMOLSKI, a former Computerworld reporter, is a vice president at Gartner Inc., where she focuses on financial management. Contact her at [bargomolski@yahoo.com](mailto:bargomolski@yahoo.com).

year. Some IT managers will be wooed by the off-shore outsourcing hype without fully understanding the risks. Others will fail to take advantage of alternative sourcing models in order to maintain the status quo. In some companies, the chief financial officer will drive the push to outsource IT, believing it to be the most cost-effective approach.

In 2004, many IT leaders will have to evaluate their current methods of

staffing, as this issue is now visible at the highest levels of the organization. Therefore, it behooves IT managers to proactively consider their sourcing options, keeping in mind that those options will continue to evolve throughout the year.

A key part of this exercise is determining whether your current model allows the IT organization (and the company as a whole) to be competitive. Answering this question will prove difficult for the many CIOs who lack the internal statistics to determine the IT organization's core competencies. For many IT leaders, the best approach will be to step back and determine what the IT group is really good at, before diving into a new sourcing model.

**3. Project prioritization.** I won't belabor this one, because my previous column dealt with this topic [QuickLink

42986]. Suffice it to say that there's a backlog of work for IT organizations, but only a little more money in 2004. Sound project prioritization and governance is needed to avoid a train wreck.

**4. Security.** If you couldn't tell from the persistent virus outbreaks in 2003, we aren't done with this problem yet. Despite their best efforts, many companies were temporarily crippled by viruses last year. These high-profile outages are bad for business and bad for IT organizations. Expect 2004 to bring growing interest in behavior-based blocking technologies (that scan PCs for security policy violations when the PCs connect to the network) and intrusion-prevention technologies. During 2004, companies will also continue to deal with business continuity planning. Many enterprises will struggle with the basics of disaster recovery, while more advanced users will move on to business process resiliency and recovery, as well as improving incident response and crisis management.

**5. Continued focus on cost.** While IT budgets are stabilizing, there will continue to be a focus on cost this year. Cost reduction is now a core component of many IT organizations' ongoing improvement programs. The challenge here is to continuously drive out unnecessary costs without hurting the organization in the long run.

Expect a greater level of accountability throughout the enterprise regarding cost, too. Promised cost savings are more likely to be tracked, and managers will increasingly be held accountable and rewarded based in part on their ability to deliver the expected savings. **Q 43992**

## WANT OUR OPINION?

For more columns and links to our archives, go to [www.computerworld.com/opinions](http://www.computerworld.com/opinions)



Middleware is Everywhere.

Can you see it?



IBM

DB2

Key

1. Verifies insurance on the spot.
2. Files digital claim in an instant.
3. Approves estimate at the site.
4. Orders new bumper at the scene.
5. Receives settlement in a snap.

**MIDDLEWARE IS IBM SOFTWARE.** Software like IBM DB2 Content Manager. A complete and open solution that easily manages and leverages information from almost anywhere. Even content like video and scanned images is easily and securely accessed. It's how responsiveness increases, productivity soars and knowledge becomes power. **@business on demand™** Go to **ibm.com/db2/middleware**

IBM, DB2, the @business on demand logo and e-business on demand are registered trademarks or trademarks of International Business Machines Corporation in the United States and/or other countries. ©2003 IBM Corporation. All rights reserved.



# HCL

## HCL TECHNOLOGIES AMERICA, INC.

HCL Technologies America, Inc. and its affiliate companies, like HCL Technologies (Illinois) Inc., and HCL Technologies (Mass.) Inc., have multiple openings at its offices in Sunnyvale, CA; Stamford CT; Plano TX; Florham NJ, Irvine CA, Vienna, VA, Boston, MA, Chicago, IL, Detroit, MI as well as project sites throughout the United States for the following positions:

**Software Engineers**  
**Programmer Analysts**  
**Systems Analysts**  
**Database Administrators**  
**Systems/Network Administrators**  
**Project Managers**  
**Account Managers/Sales Managers/Business Managers**  
**Sales Engineers**  
**Industrial Engineers**  
**Market Research Analysts**  
**Management Analysts**

Salary will be commensurate with education and experience. All positions may involve travel or relocating to various client sites throughout the US.

For consideration please send your resume to:

HCL Technologies America, Inc.  
 Attn.: HR Dept. (Computerworld Ad.)  
 330 Potrero Avenue  
 Sunnyvale, CA 94085  
 Email: [cwjobs@hcltech.com](mailto:cwjobs@hcltech.com)

Please indicate the location and the position you are applying for.

[www.hcltechnologies.com](http://www.hcltechnologies.com)

**Quality Control Engineer:** Under direct supervision help to ensure the integrity, stability, usability and scalability of all company software applications. Assist in white box and black box testing and perform manual and automatic testing with industry standard scripting languages. Perform basic programming in C++ or Visual Basic. Perform manual testing with the help of student interns. Requirements include a Bachelor's degree or equivalent in Computer Science, Mathematics, an Engineering discipline or related field and one year of experience in the job offered or related field of computer support. Applicants must have unrestricted authorization to work in the United States. Salary \$55,952/year. 40 hours/wk. Respond with two copies of resume to Case #200203405, Labor Exchange Office, 19 Stanford St., 1st Fl., Boston, MA 02114

### Programmer/Analyst

Location: Simpsonville, South Carolina. Must be able to design, develop and test computer programs, applying knowledge of programming techniques and computer systems. Will be responsible for installation of software and providing technical assistance to program users.

Must have Masters degree in Computer Science. Must have experience with object-oriented programming, the software development lifecycle, relational databases and the latest Microsoft development tools. Relocation would be at applicant's expense. To apply please submit resumes to: Castle Solutions, Inc. 114 Sandhurst Drive, Simpsonville, SC 29680.

**Programmer/Analyst needed for Software Development, Services & BPO firm located in Burlington, VT.** Job duties include: Analyze, develop, code, test and implement computer software applications/systems in client server and web-based environments for clients located along the east coast. Develop systems to assist in content and data management. Use JSP, Java, Oracle and Windows NT. Perform work as part of a team under direct supervision. Applicant must have B.S. degree in Computer Science, Business, Mathematics or Engineering. Degree based upon combination of academics and experience is acceptable. Applicant must also have 2 yrs. exp. in the job duties described above or in any computer related occupation which includes the skills listed above. 40hrs/wk, 8:00am-5:00pm, Mon-Fri, \$52,936/yr. Send resumes to: Job No. 612531, P.O. Box 488, Montpelier, VT 05601-0488.

**JUNIOR SYSTEMS ADMINISTRATOR-Financial management firm seeks Junior Systems Administrator for its 250 nodes Linux cluster for trading programs.** Duties include cluster administration (building Linux kernels, building packages, log-file analysis, writing automation scripts, monitoring nodes, performance tweaking & troubleshooting) & management of in-house support infrastructure, including daily administration of users 50PCs and 250 Sun machines, utilizing UNIX. Backup administration using Legato Networker with 600+ tapes. Bachelor's degree in Computer Science or Engineering (any field) and at least 6 month experience required. Salary according to experience. Mail resume to RTC, 600 Route 25A, East Setauket, NY 11733, Attn: JR.

### Computer Professionals (Multiple Openings)

**Software Engineer/Systems Analyst/Database Administrator/Network Administrator**

Chatham, IL.

Must have bachelors degree or equivalent and experience in some of the following skills: C/C++, Java, Web Methods, Cold Fusion, Microsoft Technologies (Visual Basic, .NET, ASP) CRM (Siebel, Clarify, Vantive), Middle Ware Technologies (Orbis, Corba, Tibco, Vitria) Data Ware Housing Tools (Informatica, Data Stage, Abinitio, Business Objects, Cognos, Micro Strategy, Brio) ERP (SAP, People Soft, Oracle Apps, Baan), Mainframe (Cobol, CICS, JCL, VSAM) AS400, E-commerce, Databases (SQL Server/Oracle/DB2/Sybase), Microsoft Windows(95/98/NT/2000, Exchange), UNIX (Sun Solaris, HP, AIX), Linux and QA (Win Runner, Load Runner, Silk, Quickpro, Manual Testing).

**Position requirement:** Must be willing to travel and/or relocate per project specification.

Mail your resumes to: [jobs@amsolinc.com](mailto:jobs@amsolinc.com)

or

Human Resource Director,  
 American Solutions Inc.,  
 145 North Market Street, Suite 1  
 Chatham, IL 62629-1326.

**Programmer/Analyst needed for Software Development, Services & BPO firm located in Burlington, VT.** Job duties include: Analyze, develop, code, implement and test computer software applications/systems in a mainframe/legacy environment for multiple clients located throughout the East coast. Projects include development and conversion. Use COBOL, PL/SQL, DB2, VSAM, JCL, and UNIX. Perform work as part of a team under direct supervision. Applicant must have B.S. degree in computer science, engineering, math, or business. Applicant must also have 2 yrs. exp. in the job duties listed above or in any computer related occupation which includes the skills listed above. 40hrs/wk, 8:00am-5:00pm, Mon-Fri, \$52,936/yr. Send resumes to: Job No. 612582, P.O. Box 488, Montpelier, VT 05601-0488.

**SENIOR PROGRAMMER/ANALYST** to analyze, design, develop, implement and maintain web-based application software in a client/server environment using object-oriented methodologies, C, C++, VC++, MFC, SQL Server, InstallShield, XML, HTTP, ATL, STL, COM/DCOM, Java, J2EE and WebLogic under Windows NT/2000 operating systems. Require: B.S. degree in Computer Science, an Engineering discipline, or a closely related field with 2 yrs of exp. in the job offered or as a Software Engineer. Extensive travel on assignment to various client sites within the U.S. is required. Competitive salary offered. Apply by resume to: Debra VanderMeer, Chutney Technologies, Inc., 11 Piedmont Center, 3495 Piedmont Rd, Ste 269, Atlanta, GA 30305; Attn: Job AP.

**COMPUTER SYS ADMINISTRATOR** wanted by Refurbishing comp in S. Hackensack, NJ. Must have Bachelor's Degree or Equiv in Comp Sci, Math or Elec Engg + Exp. Respond to: Teamex Corporation, 10 Horizon Blvd., S. Hackensack, NJ 07606. Attn: J. Lee

**Programmer Analyst, Senior** in Chicago, IL to plan & implement Enterprise Resource Planning using JDE Tool set, Enterprise Report writer and using JD Edwards One WorldXPI & World Technology tools; design, develop & maintain various 3rd-party products interfacing w/ JDEdwards syst. (updates, security maintenance and admin); Provide 3rd level tech. support including Help Desk and tech support staff in trouble shooting issues; Monitor JDE systems including diagnosis and implement solutions; coordinating JDE systems, third party operational requirements with overall IS operations and customer requirements; Maintain up-to date documentation for JDE, including admin. functions; Train other IS personnel in the use and support of JDE and third party products. Req's B.S. in Comp. Sci., Compl Appl. or Elect. Eng., and prior experience as a Programmer Analyst. Also req's expertise in JDE One World Technology and in development/maintenance of financial planning applications. Send resume to Equity Office Properties, CJ 1128 2 N. Riverside Plaza, Chicago, IL 60606.

### COMPUTER PROFESSIONALS

Opportunities for:  
 • PROCESS CAPABILITY ANALYST  
 • QC ANALYST  
 • WEB ARCHITECTS/DEVELOPERS  
 • SYSTEMS ANALYSTS  
 • WEB GRAPHIC DESIGNERS  
 • NETWORK ENGINEERS  
 • PROGRAMMER/ANALYSTS  
 • SOFTWARE ENGINEERS

**SKILLS:**  
 • COLD FUSION • SPECTRA  
 • ORACLE • VISUAL BASIC  
 • VISUAL C++ • SIEBEL • ASP  
 • COM, DCOM • JSP • HTML  
 • JAVA, JAVA BEAN • EJB JAVA  
 SERVLETS • WERSPHERE  
 • IBM MQ SERIES • XML/UML  
 • MTS • CLARIFY • PERL  
 • OBJECTPERL • SPYPERL  
 • SMALLTALK • PL/SQL  
 • VISUAL AGE • COBOL, SPL, UNIX

Visit our website @  
[www.computerhorizons.com](http://www.computerhorizons.com)

Attractive salaries and benefits. Please forward your resume to: H.R. Mgr., Computer Horizons Corp., 49 Old Bloomfield Avenue, Mountain Lakes, New Jersey 07046-1435. Call 973-299-4000. E-mail: [jobs@computerhorizons.com](mailto:jobs@computerhorizons.com). An Equal Opportunity Employer M/F.

**Sr. DBA** Planning, capacity modeling, design, validating, tuning, supporting & maintaining large (500G+) CRM database hosted in SQL2000 ASP model (clustered). Design & validate customer req. to meet 9999 Service Level Agreements. Req. BS comp sci or related & 4 yrs exp. as DBA with 2 yrs support large CRM DB & clustered tech. SQL2000 using MS. Dot.net, including modeling, design, validating, support & maintenance. Perm workers only. Resumes to: K. Carrer, Reynolds and Reynolds, P.O. Box 2608, Dayton, OH 45401.

**Software Engineers for Naperville, IL office.** Develop software applications using C, C++, VB, Delphi, ASP, XML, UML, Coolgen, Interwoven, Oracle, PL/SQL, Developer 2000 & Designer 2000. Bachelors or equivalent req'd in Computers, Engineering, Math or related field of study +1 yr of related exp. 40 hrs/wk. Must have legal authority to work permanently in the U.S. Send resume to HR Manager, Softsol Resources, Inc., 48383 Fremont Blvd, Ste 116, Fremont, CA 94538.

Seeking qualified applicants for the following positions in Memphis/Collinsville, TN: **Senior Technical Analyst.** Research, evaluate, implement and coordinate changes to computer systems/applications. Requirements: Bachelor's degree\* or equivalent in computer science, math, engineering or related field plus 5 years of experience in systems/applications development, including programming. Experience with Java, Jakarta Struts architecture and WebLogic application server technology also required. \*Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to: Sibi George, FedEx Corporate Services, 1900 Summit Tower Blvd., Suite 1400, Orlando, FL 32810. EOE M/F/D/V.

**PROGRAMMER ANALYSTS** for Naperville, IL office. Develop & maintain software applications using Oracle, SQL Server, Erwin, Linux, Sybase, XML, UML, Interwoven, Coolgen, ClearCase, ClearQuest, Plumtree, PVCS, UNIX. Bachelors Degree req'd in Computers, Engineering, Math or related field of study + 2yrs of related exp. 40 hrs/wk; Must have legal authority to work permanently in the U.S. Send resume to HR Manager, Globalways, Inc, 39176 B, State St, Fremont, CA 94538.

**F/T Instructional Technology Support Specialist.** Responsible for performing and arranging repair and replacement of technology equipment and network in the assigned division. Research and develop solutions to hardware/software issues. Educational background must have included training in basic network functions, hardware and software, Power Quest Deploy Center, Windows CE/PAQ support, configuring wireless 802.11b technology, Barner, PeopleSoft and Windows 2000 Server. Must have a BBA in Computer Based Information Systems. Salary: Competitive. Send resumes to: Dr. Dwight Call, GA College & State Univ., CBX 049, Milledgeville, GA 31061.

Want a new  
IT career?

Check out our jobs

in the combined

CareerJournal.com

database.

[www.itcareers.com](http://www.itcareers.com)

## A Call To Action!

Take the hassle out of searching for the right candidate and contact us at (800) 762-2977.

We can place your message in front of 2/3 of all US IT professionals.

Call (800) 762-2977

[www.itcareers.com](http://www.itcareers.com)



**SENIOR PROGRAMMER/ANALYST**  
**Werner Enterprises, Inc.**

**Duties:** Analyze, design, modify, develop and implement software programming applications; participate in requirements gathering, testing and code reviews; provide technical support and other development-related duties.

**Education & Training:** Bachelor's degree in Computer Science or a related field.

**Experience:** Working knowledge of Java Servlets, XML/XSL, SQL, EJB 2.0, JMS and JDBC; three (3) years J2EE development experience in a corporate environment.

**Hours & Wages:** 40 hours/week; \$83,000/year.

**Reference:** Persons interested in this position may send correspondence to:

Alberta Goode  
Human Resources  
Werner Enterprises, Inc.  
14507 Frontier Road  
Omaha, NE 68145-0308

Please reference code # 6312

**Position is located in Omaha, Nebraska. No assistance with relocation expenses is offered by the Company. Applicant must have proof of legal authority to work in the United States.**

Software Development Engineer (Denver) - Design/develop/code/test/debug new complex software/make significant enhancements to an Intranet Application used to manage service orders by the internal Interconnect Service Center on a Sun Solaris platform utilizing Java & JAVA Servlets. Use HTML to interface w/ service orders and JDBC to access an Oracle database. Interface with legacy systems using XML and employ CORBA technology for instant user notifications. Perform maintenance on existing software. Develop solutions across many disciplines & be responsible for explaining solutions & procedures. Apply principles/theories/concepts & use methodologies/tools/documentation processes/test procedures to complete projects related to moderately complex software. BS Comp. Sci., Eng., or related field. 2 yrs. exp as Software Eng., IT Consultant, or Computer Eng., \$71,393/yr, M-F 8-5, working &/or theoretical knowledge of: Java, JAVA Servlets, JDBC, Oracle, XML, HTML, Sun Solaris, & CORBA. Apply by resume only to CODOL, Two Park Central, 1515 Arapahoe St., Suite 400, Denver, CO 80202; Ref. job order# CO5065672.

Seeking qualified applicants for the following positions in Memphis, TN: **Senior Operations Research Analyst.** Using operations research methods, analyze broad and complex corporate problems/projects. Requirements: master's degree\* or equivalent in operations research, applied mathematics, engineering or other quantitative field plus 4 years of experience in systems analysis, engineering, applied mathematics or related field. Experience with: developing algorithms using either C/C++, Java or CPLEX; researching and developing optimization-based and heuristic models for large-scale network problems; and statistical modeling and data analysis using statistical software also required. \*Ph.D. in appropriate field will offset 3 years of general experience. Submit resumes to Michael Umlauf, Federal Express Corporation, 3680 Hacks Cross Road, H-2220, Memphis, TN 38125. EOE M/F/D/V.

**Consultant:** Consult with clients to define need or problem; analyze requirements and data to advise on and recommend solutions; design, develop, implement, code, test, maintain, administer, and document software applications and systems; perform business analysis to develop software applications; perform all aspects of creating information technology solutions including database design and development, object oriented design and development, and Human-computer interfaces. Bachelor's degree or foreign academic equivalent in Management Information Systems or Computer Science and six months experience in the position offered or six months of experience as a Consultant required. Experience in related occupation must include performing business analysis to develop software applications and experience performing all aspects of creating information technology solutions including database design and development (data layer), object oriented design and development (application layer), and Human-computer interfaces (presentation layer). 40 hrs./wk.; 8:00am - 5:00 pm. \$47,000/year. Must have proof of legal authority to work in the U.S. Send your resume to the Iowa Workforce Center, 215 Watson Powell Jr. Way, Suite 100, Des Moines, Iowa 50309-1727. Please refer to Job Order 1101836. Employer paid advertisement.

Software Engineer for Tewksbury, MA based developer of software products for J2EE web applications, portlets and web services. Requires Bachelor of Science degree in Computer Science, Computer Engineering or related area and one (1) year experience in object oriented design of web-based software applications using Java, JSP, XML and relational databases including configuring production deployment environments, conducting software requirement analysis, performing unit testing, developing software QA processes, creating product and technical documentation and providing customer support. The position is located in Tewksbury, MA with 15% travel. Send resume to Bowstreet, Inc., Human Resources, Ad Code: 0492, 200 Ames Pond Drive, Tewksbury, MA 01876.

**SENIOR PROGRAMMER/ANALYST** to analyze, design, develop and maintain web-based application software in a client/server environment using object-oriented methodologies, C, C++, Java, JDBC/ODBC, Java RMI, CORBA, JVM, Jbuilder, CVS, WebLogic, WebSphere and iPlanet under UNIX and Windows operating systems. Require: B.S. degree in Computer Science/Engineering, or a closely related field with 2 yrs of exp. in the job offered or as a Systems Analyst. Extensive travel on assignment to various client sites within the U.S. is required. Competitive salary offered. Apply by resume to: Debra VanderMeer, Chutney Technologies, Inc., 11 Piedmont Center, 3495 Piedmont Rd, Ste 289, Atlanta, GA 30305; Attn: Job SN.

**Systems Analyst.** Design, implement & test computer network protocols and systems using TCP/IP stack, routing, media access protocols, QoS & ATM with C & C++. Also test protocol conformance with RFC standards. Requirements: Masters in Computer Science or Computer Engineering or Electrical Engineering. 40-hr work. Job/Interview Site: Culver City, CA. Send resume to Scalable Network Technologies, Inc. 6071 Bristol Parkway, # 200, Culver City, CA 90230.

**Java Application Development:** Develop large-scale Internet appls. applying OO prog. tech using C/C++, J2EE JSP, Servlet and EJB in a n-tier client/server env.on Win2000/NT / Unix; formulate detailed design specs for further development of appls. in WebLogic Server using XML, SQL, Oracle, and ClearCase, and interface Oracle to Java appls.thru JDBC/Swing; develop client side GUI screen using JBuilder/JavaScript; troubleshooting, tuning and debugging.

**Application Testing**

Identify data scenarios/develop detailed test plans; write test script using SQA/Rational Robot, ClearCase and ClearQuest and complete testing life cycle of Web-based GUI appls.on Win-2000/NT / Unix; setup/convert data on/from AS/400 and testing populated data in Oracle / DB2 with SQL query; post beta release issues and QA process.

**Data Warehousing**

Develop large-scale decision support/reporting/analysis appls. in WinNT / Unix env. applying data warehousing tech.; create datamarts and develop appls. for data loading, auditing and report generating process on Informix/Oracle and SQL server using Crystal Reports, Business Objects, VB, OLAP; design web-based data reporting appls w/ JavaScript, VBScript, ASP, JSP, DHTML; adhoc Unix scripting, troubleshooting, SQL tuning and debugging.

Multiple positions in St. Louis, MO metro area. Require BS/BA or the equivalent in Comp. Sc., Engr. MIS. or in a closely related field.(will accept equ. exp.) Exp. required: 6 mon/jr., and 3 yrs./sr. positions, and must be able to perform all the duties on the day of employment. Full time. Resume to Crawford Group, Inc. at isjobs@erac.com Ref: 122903G NO CALL/EOE

**All Stages Applications Developer**

Design, develop, test, implement, debug and support proprietary business computer software and Visual Basic software programs for all three layers of an n-Tier application, configure COM components for MTS, read and write XML messages to MSMQ, design database using Erwin Case tool, and create stored procedures, tables, views, triggers in MS SQL Server 7.0, utilizing a full range of Rational Rose Tools (Use Case, Visual Modeling, etc.) user interface skills (to include VB Script, Java Script, MS Visual Interdev and XML/XSL), business layer skills (to include COM/DCOM), data layer skills (to include Oracle RDBMS, PL/SQL, MS SQL AND T-SQL). Requires Bachelor's or equivalent level degree in Computer Science, Computer or Software Engineering, MIS, or closely related field and 3 years experience as an All Stages Applications Developer. Qualified applicants must presently be eligible for permanent employment in the United States. Successful applicant must be able to perform job duties on date of application. 40 hours per week, overtime as needed without additional compensation. Position is with Bradford & Galt, Inc. in St. Louis, Missouri. Send resumes to: Ms. Kelli Baruzzini, 4 City Place Drive, Suite 100, St. Louis, MO 63141. EOE

**Distributed Computer System Analyst**

Developing GIS for Property Tax Administration, designing applications for use in the in-depth study & for tax roll review process, and providing technical assistance. Req. Master degree in GIS, Comp. Sci. or closely related field, 1-yr GIS exp. & proficient in ArcIMS, ArcGIS and SQL. 40 hrs/wk. Send resume w/ cover letter to Patricia R. Mitchell, HR Process Manager, FL Department of Revenue, P. O. Box 10410, Tallahassee, FL 32302.



For over 20 years, **Syntel** employees across North America, Europe, and Asia have helped build advanced information technology systems for leading Fortune 500 companies and government organizations to improve their efficiency and competitiveness. Today, Syntel professionals are building rewarding careers by providing solutions in e-business, CRM, Web Design and Data Warehousing.

Come discover why Forbes magazine placed Syntel second on its list of "The 200 Best Small Companies in America" and Business Week ranked us #11 on its list of Hot Growth Companies.

Due to our rapid growth, we have immediate, full-time opportunities for both entry-level and experienced Software Engineers, Consultants, Programmers, Programmer/Analysts, Project Leaders, Project Managers, Supervisors, Database Administrators, Computer Personnel Managers and Computer Operations/Account Managers/Account Executives with any of the following skills:

**Mainframe**

- IMS DB/DC or DB2, MVS/ESA, COBOL, CICS
- Focus, IDMS or SAS

**DBA**

- ORACLE or SYBASE
- DB2

**Client-Server/WEB**

- Siebel
- Websphere
- Com/DCOM
- Web Architects
- Datawarehousing
- Informix, C or UNIX
- Oracle Developer or Designer 2000
- JAVA, HTML, Active X
- Web Commerce
- SAP/R3, ABAP/4 or FICO or MM & SD
- Oracle Applications & Tools
- Lotus Notes Developer
- UNIX System Administrator
- UNIX, C, C++, Visual C++, CORBA, OOD or OOPS
- WinNT
- Sybase, Access or SQL server
- PeopleSoft
- Visual Basic
- PowerBuilder
- IEF

**Account Executives, Account Managers and Business Development/Account Specialist**

positions available.

Some positions require a Bachelor's degree, others a Master's degree. We also accept the equivalent of the degree in education and experience.

With Syntel (NASDAQ: SYNT), you'll enjoy excellent compensation, full benefits, employee stock purchase plan and more. Please forward your resume and salary requirements to: **Syntel, Inc., Attn: Recruiting Manager-LD01, 525 E. Big Beaver, Suite 300, Troy, MI 48083. Phone: 248-619-2800; Fax: 248-619-2888. Equal Opportunity Employer.**

**SYNTEL**  
**www.syntelinc.com**



SkyMark Corp. seeks Computer Programmer in our Pittsburgh, PA loc. Work with following languages and DBMS's: C++, Java, ColdFusion, Tomcat, JSP, ASP, SQL Server, Oracle, Access, SPSS. Implement clinical database systems to support hospital quality and process improvement. Work with healthcare data, hospital IT environment, statistics, and GUI development. Must have BS in CS or related field + 4 yrs. relevant experience. Resume to SkyMark, 7300 Penn Ave., Pittsburgh, PA 15208.

S/W Engineers to design, develop/maintain web and CRM apps using Java, VB, Oracle, Dev 2000, SQL, JSP, Clarify Suite of Products, Weblogic on Windows & UNIX OS; provide training & user support for the systems and related appln internally & to clients; test, debug and modify existing software. Require: MS or foreign equiv in CS/Engineering (any branch) & 1 yr exp. in IT. F/T. High Salary. Travel involved. Resumes to HR, ABZ Consulting, Inc., 2600 Century Prkwy, Ste 100, Atlanta, GA 30345.

Jr. Systems Administrator: Entry-level position to perform general administration of the MS based systems & LAN. Design & maintain Co. web sites in both Eng. & Chinese. No exp. req. Req. B.Sc. or its foreign degree equivalent based on education & experience in CS, IT, Systems Engineering or related field. Resume to: Mgr. American Wholesale, Inc., 389 Veteran's Memorial Hwy. Mableton, GA 30126

Information Systems Analyst: Maintain & monitor IMPACT software; develop supplementary software in Microfocus Cobol, Visual Basic, ODBC with Transact's Mmddy UDD to ensure integration in the financial & manufacturing environment; maintain the communication's environment using Access-5. Req. 2 yrs of univ. in Technical discipline or closely related discipline with 2 years of work exp in job offered or 2 yrs in related occupation as Consultant or any suitable combination of education, training, and/or work experience. Send resume to A. Warmus, ATR, LLC., 707 S. Erwin St., Catersville, GA 30120. Ref WS.

Senior Programming Analyst-40 hrs/wk 9-5, Comp. Salary Offered, in Weston, FL. Req. Bachelor's Degree or Equivalent in Computer Information Systems + 1 yr. exp. in job offered-Analyzing the computer system requirements & conducting designing, coding & implementation of technical solutions to fulfill requirements; creating & maintaining Visual Basic, SQL, Access and web based applications, etc. Send resume to Bill Anderson, CHCS Services, Inc., 3050 Universal Blvd., #150, Weston, FL 33331.

Prog/Analysts (Job 40) to analyze, design apps using C++, Java, EJB, JSP, Jscript, Servlets, XML, HTML, Weblogic Server, Oracle, under Windows /UNIX OS; perform unit, functional, integration, regression & systems level testing; analyze user reqs, prepare design documents; develop/enhance online & batch programs; implement, install, test, debug & modify new/existing apps. Require: BS or foreign equiv. in CS/Engg. (any branch)/Math & 2yrs of exp. in IT. F/T. Resumes to: Priscilla Vickers, Transplace, 509 Enterprise Drive, Lowell, AR 72745. Must specify on cover letter applying to Job 40.

Systems Engineer: Develop & configure systems for IBM P-Series systems, SP, Regatta with AIX certifications; analyze & determine feasibility of design for AIX network & HACMP configurations; formulate/design software systems & software testing procedures using various industry models. Req BS or foreign dgr equiv in Systems Engineering or closely related discipline with 6 yrs work exp as IT Specialist or related occupation. Send resume to Paaridian Technologies, Inc. 11375 Southbridge Pkwy, Ste 100, Alpharetta, GA 30022. Ref SS

Systems Analysts with experience in complex, inter-operable business applications, Progress 4GL software, and other technologies for advanced level positions in Montgomery, Alabama. Send resume to Jay R. Smith Mfg. Co., Attn: Mike Polis, 2781 Gunter Park Dr. East, Montgomery, AL, 36109-0237. Must reference job code #ICDC. EOE.

Programmer Analyst wanted by IT Consulting Co. in IL to dvlp, test & implmt custom s/ware apps in Win & UNIX OS. Req Bach or its equiv in Comp Sci, Engg, Math or Sci & 6 mos exp in job offd. Respond to Rasheed Quaraishi, President, MAQ Technologies, Inc., 953 Plumgrove Rd., Schaumburg, IL 60173. No calls.

Megatech International is a small but fast growing IT company. We have several openings for software/project engineers programmers/system analysts. Candidates must have MS/BS degree or equiv. with experience. Attractive wage w/ full benefits. Please apply at [jobs@megatech.com](mailto:jobs@megatech.com). EOE.

ShareBuilder Corp. (former Netstock) has position for DBA responsible for online financial brokerage service using Powerbuilder, SQL server. Minimum requirement is bachelor with experience in SQL. Competitive wage with benefits. Contact [stevet@sharebuilder.com](mailto:stevet@sharebuilder.com). EOE.

McData Corporation seeks applicants for the position of Software Engineer in Sunnyvale, CA to design and develop robust software to manage system failure and application fail over/restart. Requirements include master's degree in computer science, engineering, math, physics or related field and 2 yrs exp working as a software engineer in RAS, fault tolerant distributed systems. Respond by resume to Pete Whittle, McData Corporation, 380 Interlocken Crescent, Broomfield, CO 80027 and refer to JON 1.

Software Galeria, Inc. d/b/a Ascent SGI has opportunities in Purchase, NY; Canonsburg, PA, & Roselle, IL for experienced Software Engineers and Network/System Admin (multiple openings), w/relevant education and experience, additional qualifications needed: ERP, CRM, RDBMS - Oracle, Sybase, SQL Server, DB2, GUI tools, C/C++, VB script, .Net, C#, ASP, J2EE, JSP, JDRS Java script, EJB, Web sphere, Weblogic: HTML, DHTML, XML, VXML, XSL, ERWIN Admin skills, ASR/TTS, CTI, Sun Solaris, HP-Uinx, Win. Environments. Resumes: 2700 Westchester Avenue, Suite 419, Purchase, NY 10577.

NetSoft has openings for IT professionals. Skills in COBOL II, CICS, MVS, JCL, VSAM & DB2, HTML, Java, PWB, IIS, JDBC, ASP, JavaScript, XML, C/C++, Oracle preferred. Applicants must have BS/MS or equivalent. Travel maybe required. Apply at [jobs@nsoft.net](mailto:jobs@nsoft.net). EOE.

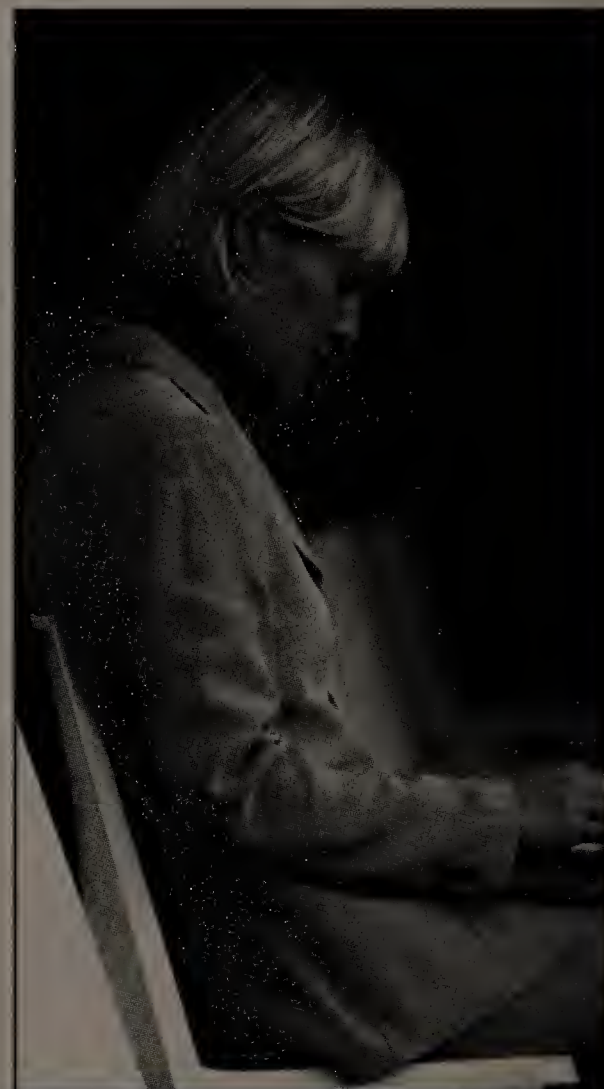
Argent LLC is looking for programmer/system analyst, software/project engineers. Duties include software & system application design. Skills in C/C++, Java, PL/SQL, Oracle are plus. Travel required for some positions. Degree is a must. Contact [achauhan@argentinfotech.com](mailto:achauhan@argentinfotech.com). EOE.

### Software Engineer

Design/develop application software and database applications. MS in CS or related and 1 yr exp in software engineer related work. Resume to Ryan Hou, LHP Software, 305 Franklin St., Columbus, IN 47201.

Programmer/System Analyst: Perform duties w/ the Business Info. Systems (BIS) group. Programming support for Amgen's e-procurement system (Ariba), related documentation activities, & other programming support as necessary. Req Master in Comp. Sci. or Industrial Engineering & Operations Research or Related Technical Field & 1 yr exp in job or 1 yr exp as a Consultant. Send ad & resume: Kyle Foster, Amgen Inc., One Amgen Center Dr., Thousand Oaks, CA 91320-1799 (jobsite). Include Ad# 03-489FV.

Systems Analysts (Job 60) to analyze, design logistics apps in data warehousing enviro using Oracle, VB, PL/SQL, Access, under Windows OSs; analyze, conduct studies to design systems for cost reductions and process improvements; support business intelligence and metric reporting; integrate, transform data used for management analysis and decision support. Require: B.S. in CS/Engg (any branch) or related field and 2 yrs exp in job offered. MS in any of the above will also be accepted. F/T. Resumes to: Priscilla Vickers, Transplace, 509 Enterprise Drive, Lowell, AR 72745. Please specify job 60 on cover letter.



Sure  
Computerworld,  
InfoWorld, and  
NetworkWorld,  
Help You Do A  
Better Job.

Now Let Us Help  
You Get One.

Check us out at:  
[www.itcareers.com](http://www.itcareers.com)

or call (800) 762-2977

## IT Education & Training Directory

Contact the companies listed below  
to help you with your training needs!

To place your ad please call 800-762-2977

### IPexpert, Inc.

(866) 225-8064  
[www.ipexpert.com](http://www.ipexpert.com)  
CCIE (R&S, SEC, and C&S), CCSP,  
CCNP, CCNA, IP Telephony

### CBT Nuggets

(888) 507-6283 & (541) 284-5522  
[www.cbttuggets.com](http://www.cbttuggets.com)  
Affordable training videos on CD  
MCSE, MCDBA, MCSA, CCNA,  
Citrix, Linux, A+, Net +

### Transcender

(615) 726-8779  
[www.transcender.com](http://www.transcender.com)  
Award-winning practice exams  
for IT certification





itcareers.com

can solve the

labyrinth of

job hunting by

matching the

right IT skills

with the right

IT position.

Find out more

at:

www.itcareers.com

Information Technology

*Apply your  
Executive Management Experience  
for the Service of our Public Schools!*

## SENIOR PROJECT DIRECTOR

Competitive Salary Based on Experience (\$95K+)

The Senior Project Director for the NJ SMART (Standards Measurement and Resource for Teaching) initiative, a statewide data warehouse system that provides essential information about educational performance, is responsible for coordinating the Commissioner of Education's oversight Task Force, directing the statewide deployment with 600+ school districts, managing contractors, and overseeing a multi-million dollar planning process. Successful candidate must be a seasoned project manager with large scale deployment experience, be a proven leader, highly motivated, self-directed and team-oriented. **Requirements:** Bachelor's Degree (preferably Master's Degree) in information management, business administration or related field. Fifteen (15) years of experience in general project management. Please forward resumes by February 27, 2004.



For complete job description, please visit:  
[www.state.nj.us/njded/genfo/vacancy.htm](http://www.state.nj.us/njded/genfo/vacancy.htm)  
Personnel Director

**New Jersey Department of Education**

Reference #: U-04-006-J01

PO Box 500, Trenton, NJ 08625-0500

Resumes may be e-mailed to: [resume@doe.state.nj.us](mailto:resume@doe.state.nj.us)

AA/EOE

**PROGRAMMER/ANALYST** to analyze, design, develop, implement and maintain Pocket PC, wireless and smart phone applications using object oriented methodology, C++, VC++, Win-32 API, EDMS, MFC, XML, OLE Drag/Drop and Map Objects under Windows NT/2000/XP, Windows CE and UNIX operating systems. Require: B.S. degree in Computer Science, an Engineering discipline, or a closely related field with 2 yrs of exp in the job offered or as a Programmer. Extensive travel on assignments to various client sites within the U.S. is required. Competitive salary offered. Apply by resume to: Vicki Taylor, Axiom Corp., 3490 Piedmont Rd, Ste 800, Atlanta, GA 30305; Attn: Job CV.

**Software Analyst** to design, develop, analyze and execution of test plans, test cases, test scripts using Silk Test, Silk Performer, Mercury Win Runner, Load Runner, Ration test suite, Mercury test director on Unix and Windows Platform. Require: BS Degree in Science/Engineering or a closely related field with 2 years of progressively responsible experience in the Job offered or in the related occupation of Programmer/Analyst. Extensive travel on assignments to various client sites within the US is required. Competitive Salary offered. Apply by resume to: Ravi Kandimalla, President, Everest Computers, Inc. 875 Old Roswell Lakes Road, Suite E 400 Roswell GA 30076. Attn: Job: RR

**Verion Technology Solutions Ltd.** is looking for Programmer Analysts:

Must have 2 years experience in any 2 of the following: Java, C++, XML, J2EE, EDI, Rational Rose, EJB, Siebel, Web Servers, Oracle, DB2, Sybase, Documentum, Livelink, PeopleSoft, SAP, JD Edwards, SAS, Visual Basic, ASP, Business Objects and Cognos.

Should have a Bachelor's Degree in Computer Science/Related field. Mail Resume to Verion Technology Solutions Ltd, 200 South Executive Drive, Suite 101, Brookfield, WI 53003.

**Systems Engineer III.** Req. Bach. deg. in Comp. Sci. or related field & 2 yrs. exp. in job offered or 2 yrs. exp. in systems mgmt. All of exp. must incl. exp. w/Microsoft NT v4x & Microsoft Exchange e-mail system software, incl. 5.5 & E2k. Exp. must also incl. Microsoft Windows 2000 Server & Advanced Server; UNIX SendMail; TCP/IP Networking Concepts (DNS, DHCP, etc.); Enterprise Backup Solution; Blackberry Server; & Right Fax. Must have at least 1 yr. of exp. managing a project from planning to implementation stage. In lieu of Bach. deg., will accept add'l. 5 yrs. of exp. in comp. sci. field. Work w/team to perform systems mgmt. & admin. for all Exchange infrastr. systems utilized w/in TBS worldwide, w/a focus on global server messaging. Conduct hardware & software config., performance & capacity planning, syst. monitoring, tape backup admin., syst. sizing & client config. 40 hrs/wk. Send resume to C. Sumsky, TBS International, Inc. One CNN Center, Box 105366, Atlanta, GA 30348.

**Computer - Senior IT Specialist.** Pittsburgh, Pennsylvania and at various client sites throughout the US. Architect, install, configure, and implement WebSphere-based software solutions on behalf of assigned insurance, banking and portal off-line enabling clients using Domino, JavaMail API, XML, XSLT, and EJB. Design, develop and implement portlets. Develop portal themes and skins. Mentor and train other team members. Requires Master's Degree or equivalent in Computer Science, Mgmt Information Systems or Engineering. Employer will accept a Bachelor's degree & 5 years of progressively more responsible work experience in lieu of a Master's degree, and two (2) years experience in the job offered or two (2) two years of experience in the related occupation of Software Engineer. \$95,000.00 per year. 40 hours per week 8:00am-4:30pm. Send resume to Case #WEB 383335, Site Director, Pittsburgh/ Allegheny County CareerLink, ATTN: CL Program Supervisor, 425 Sixth Avenue, Suite 2200, Pittsburgh, PA 15219-1837.

Looking for a career on the cutting edge of technology? This is the place. People here love their work because they get to think big and dream big. Combine your proven skills with our resources - and really take off. **Microsoft, Microsoft Business Solutions, and FRx** have the following opportunities available:

### Redmond, WA

Software Engineers, Program Managers, Support Engineers, Systems Analysts and Consultants, Business and Financial Analysts, Auditors and Accountants, Business Development Managers, Directors, Instructional Designers, Marketing Managers, Product Designers, Product Managers, Network Engineers, Recruiters, Technical Writers and Editors, Technology Specialists, Systems Engineers, Usability Engineers, Account Managers, HR Managers, and Software Localization Engineers

### Irvine, CA

Business Strategy Analyst

### Mountain View, CA

Software Engineers, Web Design Engineer, Program Managers, Database Administrator, Hardware/Electronic/Design Engineers

### Malvern, PA

Financial Analyst

### Reno, NV

Contract Management Revenue Analyst

### Salt Lake City, UT

Software Design Engineers, Software Animator

### Irving/Las Colinas, TX

Support Engineers, Support Professionals, Developer Support Engineers, Solution Integration Engineers, Escalation Engineers, Application Development Consultant, Technical Leads, Partner Technical Leads, Consultants, Business Analysts.

### Dallas, TX (Ensemble Studios)

Artists/Animators

### Houston, TX

Business Productivity Advisor (Services Executive).

### San Francisco, CA

Technical Account Manager

### Santa Monica, CA

Computer Systems Analyst (Consultant) and Software Engineer (Systems)

### Denver, CO

Software Engineers - FRx Software

### Southfield, MI

Managing Consultant

### Charlotte, NC

Group Manager, Support Engineers, Software Engineers

### Fargo, ND

Software Engineers - MBSC

### Findlay, OH

Software Engineer - MBSC

### Ft. Lauderdale, FL

Operations Analyst (Site Engineer), Product Manager (Segment Marketing Manager), MBS Service Practice Manager, Financial Service Manager, HR Manager

All positions offer competitive salary and excellent benefits, including bonuses, stock grants and/or stock options. 40 hours per week, flex time. E-mail your resume in text format to: <http://www.microsoft.com/careers> (indicate Job Code A41 in the subject header), or mail your resume to Microsoft Corporation, Attn: A41, One Microsoft Way, Redmond, WA 98052. No phone calls please. We are an equal opportunity employer and support workforce diversity. Visit our Web site for more details.

# Microsoft®



Manager, E-Commerce and Web Development

Sennheiser Electronic Corporation has an opening in its Old Lyme, Connecticut office for a Manager, E-Commerce and Web Development.

Conceptualizes and creates the marketing, media and business content to be placed on the company's website. Localizes existing German websites and online applications including their conventions and nomenclature to be suitable for the local U.S. market. Organizes editorial revisions of foreign language (German) electro-acoustic product information, press releases and promotional content to be published on the company's U.S. website. Forecasts and analyzes marketing, finance and other electro-acoustic industry related business conditions affecting current and future marketing policies. Analyzes, develops and implements web based marketing and media content to improve marketing strategies and promotional programs.

Must possess at least a bachelor's degree or its equivalent in Economics, Marketing or a related field and relevant work experience, including experience in field of Content Migration and Localization of foreign language (German/English) Internet Applications and technical ability to maintain, manage and develop corporate Internet resources such as web, mail, ftp servers and content management systems.

Resume and/or cover letter must reflect each requirement above and specify reference code MEWD/MGA or it will be rejected.

Forward resume to HR Department, Sennheiser Electronic Corporation, One Enterprise Drive, Old Lyme, CT 06371

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in PeopleSoft GradeBook, Campus Community, Contributor Relations and Financial Aid Modules. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of PeopleSoft GradeBook, Campus Community, Contributor Relations and Financial Aid Modules. Salary: \$70,242/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: BECS/ CareerLink Program Supervisor, Indiana County CareerLink, 300 Indian Springs Road, Indiana, PA 15701, Job No. WEB384540.

Applications Programmer: Under supervision of Senior Programmer, develop project specifications in consultation with clients; design, develop project specifications in consultation with clients; design, develop, modify & implement applications to meet client requirements. Supervise lower level programmers to ensure compliance with project specifications. Code, test, debug & document software applications. Must have: Bachelors or equivalent in Engineering or Computer Science, 3 yrs. exper. in job offered or 3 yrs. exper. in IT or programming. Salary: \$66,260/yr 40 hr/wk, M-F, 8 a.m. - 5 p.m. Submit two (2) resumes to: Case #200202998, Division of Career Services, Labor Certification Unit, 19 Staniford St., 1st fl., Boston, MA 02114.

Senior Java Engineer wanted to work in West Hollywood, California to be responsible for core, back-end technology development including the design/architecture of new Java-based solutions as well as the optimization/acceleration of dynamic web content through caching and database development; building Java Servlets/JSP systems to scale; designing and coding application components and converts prototypes into functioning applications; developing detailed specifications to describe site functionality and data requirements; developing unit and system test applications; providing documentation for developed applications and maintaining technical and documentation standards; coordinating change-control information in order to facilitate applications promotion into production web environments; conducting application troubleshooting and resolution; working with e-commerce product teams to develop prototypes of site form and function; leading site walk-throughs and peer reviews; and mentoring team members on projects, programming, analysis, troubleshooting and project management skills. Requires BA/BS in Computer Science or Information Systems; 3 to 5 years of progressive experience with JAVA server side development; at least 2 years of experience with RDMS (Oracle preferred) and programming experience with a large corporate level dot-com and/or web-enabled business; and Bachelor degree level or above coursework in each of the following: Unix Operating Systems; Java Internet Programming. Send resume; copy of transcripts and diploma; letters confirming experience; and salary requirements to Linda Doughty, Director, Employee Relations, Entertainment Publications, 2125 Butterfield Road, Troy, MI 48064.

SimpliCTI Software Solutions, providing CRM software development and implementation services seeks Software Engineers to design, develop, test and implement customized servers for clients to actuate the integration of multiple, disparate systems for customer contact routing and reporting. Positions require a Master's Degree in Computer Science, Engineering, or a related field of study and two years experience as a Software Engineer or Database Developer. Experience must include Database Engineering and Object Oriented Programming. May be gained pre or post Master's.

Senior Software Engineers to design, develop, test and implement mixed-media Customer Relationship Management (CRM) solutions, including CTI, IVR, web-based applications and email. Position require a Bachelor's degree in Computer Science, Engineering or a related field as well as five years experience as a Communications Software Designer.

Positions are located in Cary, NC. Interested applications should email their resume, Attention: Wen Kai Ho at [simplicti@simplicti.com](mailto:simplicti@simplicti.com) or by fax to (919) 858-8891.

Systems Analysts w/at least 4 yrs exp sought to analyze, design, develop, test, integrate, document & implement s/ware prgms & systems using SQL Server, Oracle, Sybase, SQL, Rational Rose & Object Oriented Visual UML Modeling on Unix & Win platforms. Equiv deg & exp also accepted. Exc. Pay & Bnfts. Mail resume w/proof of work status to HR Dept, Information & Technology Management, 6 Kilmer Rd, Edison, NJ 08817.

SOFTWARE ENGINEER to design, develop and test various modules of embedded software and perform Configuration Management for the mobile communication industry using Clearcase, ClearQuest, Java and C/C++ under Windows NT and UNIX operating systems; Automate Processes and Builds using Shell and PERL scripts; Prepare Configuration Management plans for new projects; Participate in Change Control Boards; Mentor and train junior staff members in Clearcase and ClearQuest Administration. Require: B.S. degree in Computer Science, an Engineering discipline, or a closely related field with three years of experience in the job offered. Competitive salary offered. Send resume to: Nancy A. Geraghty, Vice President, Human Resources, Panasonic Mobile Communications Development Corporation, 1225 Northbrook Pkwy., Suwanee, GA 30024. Attention Job SH.

SOFTWARE ENGINEER to design, develop, test, implement and maintain application software using Informix 4GL, ISQL, Forms/Reports, Stored Procedures, Oracle, PL/SQL, Shell Script, Awk, Cold Fusion, Java, JavaScript, Crystal Reports, Visio, Erwin, HTML, DHTML and MS Office Tools under UNIX and Windows NT operating systems. Require: M.S. degree in Computer Science/Engineering, or a closely related field with 2 yrs of exp in the job offered or as a Programmer/Analyst. Extensive travel on assignments to various client sites within the U.S. is required. Competitive salary offered. Send resume to: Sundee Chaudhry, Elite Solutions, Inc., 1670 Reserve Way, Suite 203, Decatur, GA 30033; Attn: Job PT.

Senior Consultant. Lead team to design, develop, implement & test software applications for management information systems. Database administration. Tools: PL/SQL, SQL Server, UNIX & UNIX Scripting, perl, Oracle, Developer 2000. Bachelors degree in Comp. Sci. or Eng., Electrical or Electronics Eng. + 2 yrs exp in job offered or as Systems Executive req'd. Previous exp must include Oracle, PL/SQL & UNIX. Resume and/or cover letter must reflect each requirement above or it will be rejected. 40 hrs/wk, 9am-5pm, \$84,158/yr. Job location: Seattle, WA & various unanticipated locations throughout US. By \_\_\_\_\_, send resume to: Employment Security Department, E&T Division, JOB#1237621, PO Box 9046, Olympia, WA 98507-9046.

Looking for a new career?

The new  
itcareers.com  
and  
CareersJournal.com  
combined  
jobs database  
can help you find  
one.

Check us out at:  
[www.itcareers.com](http://www.itcareers.com)  
or call (800) 762-2977

# The World Of Work Is Changing Every Week.

LUCKILY, WE ARE TOO!

itcareers.com is now  
powered by  
CareerJournal.com!

Search for jobs and post  
your resume here on  
[www.itcareers.com](http://www.itcareers.com)  
or call: (800) 762-2977



## COMPUTERWORLD HEADQUARTERS

500 Old Connecticut Path, P.O. Box 9171  
Framingham, MA 01701-9171  
Phone: (508) 879-0700  
Fax: (508) 875-4394

### PUBLISHER/CEO

Bob Carrigan  
(508) 820-8100

### EXECUTIVE ASSISTANT TO THE CEO

Nelva Riley  
(508) 820-8105

### VICE PRESIDENT/CIO

Rick Broughton  
(508) 620-7700

### EXECUTIVE VICE PRESIDENT/ EDITOR-IN-CHIEF

Maryfran Johnson  
(508) 820-8179

### EXECUTIVE VICE PRESIDENT/ STRATEGIC PROGRAMS

Ronald L. Milton  
(508) 820-8661

### EXECUTIVE VICE PRESIDENT/COO

Matthew C. Smith  
(508) 820-8102

### VICE PRESIDENT/ NATIONAL ASSOCIATE PUBLISHER

Matthew J. Sweeney  
(508) 271-7100

### VICE PRESIDENT/CIRCULATION

Debbie Winders  
(508) 820-8193

### CIRCULATION

Circulation Coordinator/Diana Turco, (508) 820-8167

### PRODUCTION

Vice President Production/Carolyn Medeiros; Production Manager/Beverly Wolff; **PRINT DISPLAY ADVERTISING:** (508) 820-8232, Fax: (508) 879-0446; **DISTRIBUTION:** Distribution Manager/Bob Wescott

### MARKETING

Director of Marketing, Print and Event Sponsorship/ Kelly Sheridan, (508) 271-7117; Director of Marketing, Research and Online/ Matt Duffy, (508) 271-8145

### STRATEGIC PROGRAMS AND EVENTS

Vice President Strategic Initiatives/Leo Leger; Director, Event Sponsorship Sales/Ann Harris; Director, Event Marketing and Conference Programs/Derek Hultzy; Manager Strategic Programs and Events /Michael Meleedy; Event Marketing Coordinator/Kate Davis; Customer Service Coordinator/Chris Leger; Events Operations Specialist/ Lynn Mason; Conference Manager/Nanette Jurgelewicz; Event Program Coordinator/Pam Malingowski; Administrative Coordinator/Shari Redan, 500 Old Connecticut Path, Box 9171, Framingham, MA 01701-9171, (508) 879-0700, Fax: (508) 626-8524

### ONLINE ADVERTISING

National Director of Online Sales/Operations, Gregg Pinsky, (508) 271-8013; Online Sales Manager, Sean Weglage, (415) 978-3314, Fax: (415) 543-8010; Online Sales Assistant, Kathy Snow (508) 270-7112; 500 Old Connecticut Path, Box 9171, Framingham, MA 01701-9171, Fax: (508) 270-3882

### CUSTOM PUBLISHING/ BUSINESS DEVELOPMENT

National Director of Integrated Solutions/Julie Proffer(415) 978-3310

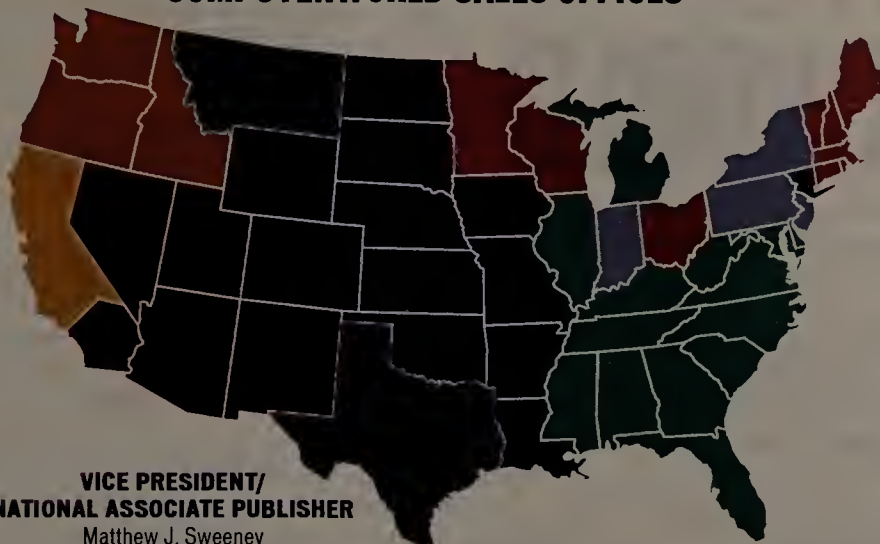
### ITCAREERS ADVERTISING SALES OFFICES

Vice President, Recruitment Advertising/Nancy Percival, (800) 762-2977, Fax: (508) 879-0184; Sales & Marketing Associate/ Joanna Schumann, (508) 620-7757, 500 Old Connecticut Path, Framingham, MA 01701; **EAST:** Regional Manager/Jay Savell, (610) 758-9755, Fax: (610) 419-2134; Account Executive/Danielle Tetraault, (508) 620-7759; **CENTRAL:** Regional Manager/Laura Wilkinson, (847) 441-8877; Account Executive/Mark Dawson, (508) 620-7760; **WEST:** Regional Manager/Caroline Garcia (408) 941-0562; Account Executive/Mark Dawson, (508) 620-7760.

### LIST RENTAL

**POSTAL:** Rich Green, (508) 370-0832, e-mail: rgreen@idglist.com. **E-MAIL:** Christine Cahill, (508) 370-0808, e-mail: ccahill@idglist.com. **MAILING ADDRESS:** IDG List Services, P.O. Box 9151, Framingham, MA 01701-9151, Fax: (508) 370-0020

## COMPUTERWORLD SALES OFFICES



### VICE PRESIDENT/ NATIONAL ASSOCIATE PUBLISHER

Matthew J. Sweeney  
(508) 271-7100  
Fax: (508) 270-3882

### SALES BUSINESS MANAGER

Laureen Austermann  
(508) 820-8522  
Fax: (508) 270-3882

### NORTHWESTERN STATES

**ACCOUNT DIRECTOR:** Jim Barrett (415) 978-3306; **ACCOUNT EXECUTIVE:** SaraJane Robinson-Retondo (415) 978-3304, 501 Second Street, Suite 114, San Francisco, CA 94107, Fax: (415) 543-8010

### BAY AREA

**ACCOUNT DIRECTORS:** Jim Barrett (415) 978-3306, Debbie Sorich (415) 978-3313; **ACCOUNT EXECUTIVES:** Emmie Hung (415) 978-3308, SaraJane Robinson-Retondo (415) 978-3304, 501 Second Street, Suite 114, San Francisco, CA 94107, Fax: (415) 543-8010

### SOUTHWESTERN STATES

**ACCOUNT DIRECTOR:** Bill Hanck (949) 442-4006; **ACCOUNT EXECUTIVE:** Jean Dellarobba (949) 442-4053, 18831 Von Karman Avenue, Suite 200, Irvine, CA 92612, Fax: (949) 476-8724

### EASTERN CENTRAL STATES/ INDIANA

**ACCOUNT DIRECTOR:** Peter Mayer (201) 634-2324; **ACCOUNT EXECUTIVE:** John Radzinski (201) 634-2323, 650 From Road - 2nd Floor, Paramus, NJ 07652, Fax: (201) 634-9289

### KEY ACCOUNTS

**VICE PRESIDENT:** Linda Holbrook (415) 978-3307; **ACCOUNT MANAGER:** Elisa Phillips (415) 978-3309, 501 Second Street, Suite 114, San Francisco, CA 94107, Fax: (415) 543-8010

### CENTRAL STATES

**ACCOUNT DIRECTOR:** Bill Hanck (949) 442-4006; **ACCOUNT EXECUTIVE:** Jean Dellarobba (949) 442-4053, 18831 Von Karman Avenue, Suite 200, Irvine, CA 92612, Fax: (949) 476-8724

### NEW ENGLAND STATES/ MINNESOTA/ WISCONSIN/ OHIO

**ACCOUNT DIRECTOR:** Laurie Mannone (508) 271-7108; **ACCOUNT EXECUTIVE:** Deborah Crimmings (508) 271-7110, 500 Old Connecticut Path, Framingham, MA 01701, Fax: (508) 270-3882

### METRO NEW YORK

**ACCOUNT DIRECTOR:** Peter Mayer (201) 634-2324; **ACCOUNT EXECUTIVE:** John Radzinski (201) 634-2323, 650 From Road - 2nd Floor, Paramus, NJ 07652, Fax: (201) 634-9289

### SOUTHEASTERN STATES/ ILLINOIS/ MICHIGAN

**ACCOUNT DIRECTOR:** Lisa Ladle-Wallace (904) 284-4972, 5242 River Park Villas Dr., St. Augustine, FL 32092, Fax: (800) 779-8622; **ACCOUNT EXECUTIVE:** Deborah Crimmings (508) 271-7110, 500 Old Connecticut Path, Framingham, MA 01701, (508) 879-0700, Fax: (508) 270-3882

## ADVERTISER'S INDEX

AT&T Wireless	33
www.att.com	
BMC Software	22
www.bmc.com	
Cisco	20-21
www.cisco.com	
Computer Associates	2
www.ca.com	
Dell	6-7*
www.dell.com	
Hewlett-Packard ProLiant	15*
www.hp.com	
Hewlett-Packard Server Blades	53
www.hp.com	
Hewlett-Packard Storage	54
www.hp.com	
IBM DB2	43
www.ibm.com	
IBM eServer	26-27
www.ibm.com	
IBM Lotus	39
www.ibm.com	
IBM Middleware	41
www.ibm.com	
InterSystems Caché	29
www.intersystems.com	
Microsoft Linux	9
www.microsoft.com/getthefacts	
Microsoft Office	G1-1
www.microsoft.com/officeIT	
Remedy a BMC Software company	16
www.bmc.com	
SAP	25
www.sap.com	
SAS	13
www.sas.com	
Sharp	17
www.sharpsusa.com	
Softchoice	18/19
www.softchoice.com	
*Regional Select Edition	

THIS INDEX IS PROVIDED AS AN ADDITIONAL SERVICE. THE PUBLISHER DOES NOT ASSUME ANY LIABILITY FOR ERRORS OR OMISSIONS.

## INTERNATIONAL DATA GROUP

### CHAIRMAN OF THE BOARD

Patrick J. McGovern

### CEO

Pat Kenealy

**COMPUTERWORLD** is a business unit of IDG, the world's leading technology media, research and event company. IDG publishes more than 300 magazines and newspapers and offers online users the largest network of technology-specific sites around the world through IDG.net (www.idg.net), which comprises more than 330 targeted Web sites in 80 countries. IDG is also a leading producer of 168 computer-related events worldwide, and IDG's research company, IDC, provides global market intelligence and advice through 51 offices in 43 countries. Company information is available at www.idg.com.



## Have a problem with your Computerworld subscription?

We want to solve it to your complete satisfaction, and we want to do it fast.

Please write to: **Computerworld, P.O. Box 3500, Northbrook, IL 60065-3500.**

Your magazine subscription label is a valuable source of information for you and us. You can help us by attaching your magazine label here, or copy your name, address, and coded line as it appears on your label. Send this along with your correspondence.

### ADDRESS CHANGES OR OTHER CHANGES TO YOUR SUBSCRIPTION

All address changes, title changes, etc. should be accompanied by your address label, if possible, or by a copy of the information that appears on the label, including the coded line.

### YOUR NEW ADDRESS GOES HERE:

ADDRESS SHOWN: ☐ Home ☐ Business

NAME

TITLE COMPANY

ADDRESS

CITY

STATE

ZIP

### OTHER QUESTIONS AND PROBLEMS

It is better to write us concerning your problem and include the magazine label. Also, address changes are handled more efficiently by mail. However, should you need to reach us quickly, the following toll-free number is available: **(888) 559-7327 Outside U.S. call (847) 559-7322.**

Internet address: cw@omeda.com

COMPUTERWORLD allows advertisers and other companies to use its mailing list for selected offers we feel would be of interest to you. We screen these offers carefully. If you do not want to remain on the promotion list, please write to the following address - **COMPUTERWORLD, Circulation Department, 500 Old Connecticut Path, Framingham, MA 01701.**

NAME  
TITLE  
COMPANY  
ADDRESS  
CITY  
STATE  
ZIP



# How to Contact COMPUTERWORLD

*We invite readers to call or write with their comments and ideas. It is best to submit ideas to one of the department editors and the appropriate beat reporter.*

**Maryfran Johnson**, editor in chief  
(508) 820-8179

## DEPARTMENT EDITORS

**Don Tennant**, News editor.....(508) 620-7714  
**Craig Stedman**, assistant News editor.....(508) 820-8120  
**Mitch Betts**, Features editor.....(301) 262-8243  
**Tommy Peterson**, Technology editor.....(508) 620-7729  
**Jean Consilvio**, assistant Management editor.....(508) 820-8562

## REPORTERS

**Bob Brewin**, mobile computing/wireless; Intel PCs and servers; health care.....(505) 425-3551  
**Matt Hamblen**, networking; network systems management; e-commerce.....(508) 820-8567  
**Thomas Hoffman**, information economics; IT investment and management issues; careers/labor.....(845) 988-9630  
**Lucas Mearian**, financial services; storage; IT management.....(508) 820-8215  
**Linda Rosencrance**, general assignment; transportation/carriers.....(508) 628-4734  
**Carol Sliwa**, Microsoft; Web services technologies; application development; retail industry.....(508) 628-4731  
**Marc L. Songini**, ERP; supply chain; CRM; databases; data warehousing; EAI; CA.....(508) 820-8182  
**Patrick Thibodeau**, enterprise systems; outsourcing and immigration issues; corporate antitrust issues.....(202) 333-2448

**Dan Verton**, federal/state government; legislation; critical-infrastructure security; travel.....(703) 321-2277  
**Jaikumar Vijayan**, corporate security/privacy issues; manufacturing.....(630) 978-8390  
**Todd R. Weiss**, general assignment; Linux; messaging/collaboration.....(717) 560-5255

## OPINIONS

**Mark Hall**, Opinions editor.....(503) 391-1158  
**Frank Hayes**, senior news columnist.....(503) 252-0100

## FEATURES

**Ellen Fanning**, special projects editor.....(508) 820-8204  
**Robert L. Mitchell**, senior editor.....(508) 820-8177  
**Mark Hall**, editor at large.....(503) 391-1158  
**Gary H. Anthes**, national correspondent.....(703) 536-9233  
**Julia King**, national correspondent.....(610) 532-7599

## COMPUTERWORLD.COM

**Tom Monahan**, online director.....(508) 820-8218  
**Sharon Machlis**, managing editor/online.....(508) 820-8231  
**Ken Mingis**, online news editor.....(508) 820-8545  
**Marian Prokop**, online editor at large.....(508) 820-7717  
**David Ramel**, e-mail newsletter/online editor at large.....(508) 820-8269  
**John R. Brillion**, associate art director.....(508) 820-8216  
**David Waugh**, associate art director.....(508) 820-8142

**Peter Smith**, Web development manager  
**Kevin Gerich**, **Mark Savery**, Web developers  
**Bill Rigby**, associate Web developer  
**Matthew Moring**, graphics designer

## RESEARCH

**Marl Keefe**, research manager  
**Gussie Wilson**, research associate

## COPY DESK

**Jamie Eckle**, managing editor/production.....(508) 820-8202  
**Michele Lee DeFilippo**, assistant managing editor/production.....(508) 820-8126

**Bob Rawson**, **Monica Sambataro**, senior copy editors  
**Eugene Dematte**, **Mike Parent**, copy editors

## GRAPHIC DESIGN

**Stephanie Faucher**, design director.....(508) 820-8235

**April O'Connor**, associate art director  
**Julie Quinn**, senior designer  
**Susan Cahill**, graphics coordinator  
**John Klossner**, cartoonist

## ADMINISTRATIVE SUPPORT

**Linda Gorgone**, office manager.....(508) 820-8176  
**Cheryl Dudek**, administrative assistant.....(508) 820-8178

## CONTRIBUTING COLUMNISTS

**Pimm Fox**, **Michael Gartenberg**,  
**Dan Gillmor**, **Paul Glen**, **Thornton A. May**,  
**David Moschella**, **Bart Perkins**,  
**Nicholas Petreley**, **Paul A. Strassmann**

## CONTRIBUTING WRITERS

**Mary Brandel**, **Russell Kay**, **Sami Laiz**,  
**Kathleen Melymuka**, **Robert L. Scheier**, **Steve Ulfelder**

## GENERAL INFORMATION

### TELEPHONE/FAX

**Main phone number** . . . . (508) 879-0700  
All editors unless otherwise noted below  
**Main fax number** . . . . . (508) 875-8931  
**24-hour news tip line** . . (508) 820-7716

### E-MAIL

Our Web address is  
**www.computerworld.com**.  
Staff members' e-mail follows this form:  
**firstname\_lastname@computerworld.com**.  
For IDG News Service correspondents:  
**firstname\_lastname@idg.com**.

### LETTERS TO THE EDITOR

Letters to the editor are welcome and should be sent to:  
**letters@computerworld.com**.  
Include your address and telephone number.

### MAIL ADDRESS

**PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701**

### SUBSCRIPTIONS/BACK ISSUES

Subscription rates: U.S., \$99.99/year; Canada, \$130/year; Central and South America, \$250/year; all others, \$295/year

**Phone** . . . . . (888) 559-7327  
**E-mail** . . . . . cw@omeda.com  
**Back issues** . . . . . (508) 820-8167

### REPRINTS/PERMISSIONS

**Contact** . . . . . **Renee Smith**  
**Phone** . . . . . (717) 399-1900, ext. 172  
**E-mail** . . . . . reprints@computerworld.com  
Visit **www.reprintbuyer.com** to obtain quotes and order reprints online.

# COMPANIES IN THIS ISSUE

Page number refers to page on which story begins. Company names can also be searched at **www.computerworld.com**.

ACCENTURE LTD. . . . . 5,18  
ADOBE SYSTEMS INC. . . . . 32  
ADVANCED MICRO DEVICES INC. . . . . 34  
ALLSTREAM CORP. . . . . 18  
ALTERPOINT INC. . . . . 34  
AMAZON.COM INC. . . . . 19  
AMBERTEK GROUP . . . . . 1  
AMERICA ONLINE INC. . . . . 30  
AMERICAN INSTITUTE OF CERTIFIED  
PUBLIC ACCOUNTANTS . . . . . 32  
AMERICAN POWER  
CONVERSION CORP. . . . . 8  
APPLE COMPUTER INC. . . . . 1,19  
APPSHOP INC. . . . . 4  
ARTHUR ANDERSEN LLP . . . . . 40  
ASCENTIAL SOFTWARE CORP. . . . . 14  
AT&T WIRELESS SERVICES INC. . . . . 4  
ATTITUDE LLC . . . . . 23  
BANK OF AMERICA CORP. . . . . 18  
BANKING INDUSTRY  
TECHNOLOGY SECRETARIAT . . . . . 10  
BARNES & NOBLE INC. . . . . 19  
BEVERLY ENTERPRISES INC. . . . . 12  
BLUE SKY STUDIOS INC. . . . . 1  
BMC SOFTWARE INC. . . . . 35  
BURTON GROUP . . . . . 23  
CABLE & WIRELESS PLC . . . . . 4  
CALPINE CORP . . . . . 5  
CAMPAIGN SUPERSTORE . . . . . 28  
CANAC INC. . . . . 37  
CANON USA INC. . . . . 1  
CAPITAL ONE FINANCIAL INC. . . . . 42  
CAPITAL THINKING INC. . . . . 38  
CAREFIRST INC. . . . . 1  
CENTRA SOFTWARE INC. . . . . 24

CERIOIAN TAX SERVICE . . . . . 42  
CHECK POINT SOFTWARE  
TECHNOLOGIES LTD. . . . . 5  
CIPHERTRUST INC. . . . . 8  
CISCO SYSTEMS INC. . . . . 5,12,35  
CITRIX SYSTEMS INC. . . . . 12  
CLEARCUBE TECHNOLOGY INC. . . . . 12  
CNN NEWS GROUP . . . . . 18  
COMPUTER ASSOCIATES  
INTERNATIONAL INC. . . . . 4,14  
COVEST BANK NA . . . . . 42  
CRYSTAL DECISIONS INC. . . . . 35  
DATAMONITOR PLC . . . . . 18  
OCML ORGANIZATION . . . . . 30  
OEAN FOR AMERICA . . . . . 28  
DELL INC. . . . . 8,19  
DIEBOLD INC. . . . . 28  
EBAY INC. . . . . 19  
EMC CORP. . . . . 14  
ENDERLE GROUP . . . . . 12  
ENTERPRISE APPLICATIONS  
CONSULTING . . . . . 51  
EXPEDIA INC. . . . . 19  
EXTREME NETWORKS INC. . . . . 12  
FEDEX CORP. . . . . 37,40  
FERRARI SPA . . . . . 35  
FINANCIAL EXECUTIVES  
INTERNATIONAL . . . . . 40  
FORD MOTOR CO. . . . . 23  
FORRESTER RESEARCH INC. . . . . 1  
FORTIS INC. . . . . 10  
FOUNORY NETWORKS INC. . . . . 12  
FOUNDSTONE INC. . . . . 5  
FOX FILMED  
ENTERTAINMENT . . . . . 1

FRONT STREET ON  
THE HUDSON LLC. . . . . 38  
GARTNER INC. . . . . 35,42  
GE COMMERCIAL FINANCE . . . . . 38  
GE REAL ESTATE . . . . . 38  
GE TRANSPORTATION SYSTEMS . . . . . 37  
GENERAL ELECTRIC CO. . . . . 1,57,38  
GEORGIA DEPARTMENT OF  
TECHNICAL AND ADULT EDUCATION . . . . . 8  
GOOGLE INC. . . . . 18,19,24  
GORES TECHNOLOGY GROUP LLC. . . . . 4  
HARLEY-DAVIDSON INC. . . . . 23  
HARVARD UNIVERSITY . . . . . 40  
HEWLETT-PACKARD CO. . . . . 1,12,14,18,30,42  
IBM . . . . . 1,8,11,14,18,19,  
23,30,34,37,52  
IOC . . . . . 10,11,12,14  
IMG . . . . . 10  
INDY MAC BANK . . . . . 1  
INETO SERVICES INC. . . . . 8  
INFOEXPRESS INC. . . . . 5  
INFORMATICA CORP. . . . . 14  
INFORMATION RESOURCES INC. . . . . 5  
INFORMATION SECURITY INSTITUTE . . . . . 28  
INTEL CORP. . . . . 18,34  
INTERNATIONAL STANDARDS  
ORGANIZATION . . . . . 10  
INTERNET ARCHITECTURE BOARD . . . . . 30  
INTERTAPE POLYMER GROUP INC. . . . . 35  
INTERVOICE INC. . . . . 37  
INTUIT INC. . . . . 4  
ISOGON CORP. . . . . 35,38  
J.C. PENNEY CO. . . . . 1  
J.O. EDWARDS & CO. . . . . 8  
J.P. MORGAN CHASE & CO. . . . . 1,38  
JOE LIEBERMAN FOR  
PRESIDENT INC. . . . . 28  
JOHNS HOPKINS UNIVERSITY . . . . . 5,28  
KAZAA.COM . . . . . 19  
KINETICODE INC. . . . . 28  
LASZLO SYSTEMS INC. . . . . 8  
LIBERTARIAN PARTY . . . . . 28  
LYDIAN TRUST CO. . . . . 35

MACROMEDIA INC. . . . . 8  
MASTERCARD INTERNATIONAL INC. . . . . 18  
MCKINSEY & CO. . . . . 18  
META GROUP INC. . . . . 1,18,35  
METRO GROUP . . . . . 1  
MFS INVESTMENT MANAGEMENT . . . . . 5  
MICROSOFT CORP. . . . . 4,8,11,18,19,20,32,34  
MIDWEST BANC HOLDINGS INC. . . . . 42  
MONSANTO CO. . . . . 34  
NATIONAL PUBLIC RADIO . . . . . 42  
NAUTICUS NETWORKS INC. . . . . 8  
NEOT.COM INC. . . . . 1  
NETSCALER INC. . . . . 34  
NETWORK ASSOCIATES INC. . . . . 5  
NORTEL NETWORKS LTD. . . . . 12  
NOVELL INC. . . . . 1,14,52  
OFFICE DEPOT INC. . . . . 1  
OKLAHOMA HEART HOSPITAL . . . . . 12  
OMNITRUST SECURITY  
SYSTEMS INC. . . . . 8  
ONYX ACCEPTANCE CORP. . . . . 42  
OPEN SOURCE  
DEVELOPMENT LABS . . . . . 14  
OPSWARE INC. . . . . 30  
ORACLE APPLICATIONS  
USERS GROUP . . . . . 51  
ORACLE CORP. . . . . 1,4,8,11,18,34,38,51  
ORBITZ INC. . . . . 19  
OVERTURE SERVICES INC. . . . . 15  
PACIFICORP. . . . . 35  
PALMONE INC. . . . . 14  
PALO ALTO RESEARCH CENTER INC. . . . . 31  
PARAMETRIC TECHNOLOGY CORP. . . . . 11  
PAYPAL INC. . . . . 8,19  
PEOPLESOFT INC. . . . . 8,11,14,51  
PETCO ANIMAL SUPPLIES INC. . . . . 1  
PING INC. . . . . 11  
PLASTIC LOGIC LTD . . . . . 31  
PROBIX INC. . . . . 8  
PROGRESSIVE STRATEGIES INC. . . . . 14  
RED HAT INC. . . . . 1,14,28,34,52  
REDMONK LLC. . . . . 11  
ROYAL BANK OF CANADA . . . . . 38

SAND HILL GROUP LLC. . . . . 18  
SANDIA NATIONAL LABORATORIES . . . . . 51  
SANS INSTITUTE . . . . . 52  
SAP AG . . . . . 4,8,11,14,51  
SA/VIS COMMUNICATIONS CORP. . . . . 4  
SCANSOFT INC. . . . . 37  
SEARS, ROEBUCK AND CO. . . . . 1,18  
SEGWAY LLC . . . . . 4  
SEVENSPACE INC. . . . . 10  
SIEBEL SYSTEMS INC. . . . . 8,18  
SIX APART LTD. . . . . 23  
SOAR TECHNOLOGY INC. . . . . 23  
SOCIALTEXT INC. . . . . 23,24  
SOCIETY FOR INFORMATION  
MANAGEMENT . . . . . 40  
SONG NETWORKS HOLDING AB . . . . . 12  
SOURCEFORGE.NET . . . . . 18  
SPRINT CORP. . . . . 4  
STRATEGIC RESEARCH  
INSTITUTE LP . . . . . 1  
STRATUS TECHNOLOGIES  
INTERNATIONAL . . . . . 16  
SUN MICROSYSTEMS INC. . . . . 8,14,30,38  
SUSE LINUX AG . . . . . 1,34  
SYGATE TECHNOLOGIES INC. . . . . 5  
SYMANTEC CORP. . . . . 5  
TARGET CORP. . . . . 18  
TECHDIRT INC. . . . . 23,24  
TELEX COMMUNICATIONS INC. . . . . 37  
TESCO PLC . . . . . 1  
THE ASSOCIATED PRESS . . . . . 18  
THE BOEING CO. . . . . 34  
THE BURLINGTON NORTHERN  
AND SANTA FE RAILWAY CO. . . . . 37  
THE CENTURY FOUNDATION . . . . . 5  
THE GILLETTE CO. . . . . 14  
THE L.D. KICHLER CO. . . . . 8  
THE NEIMAN MARCUS GROUP INC. . . . . 1  
THE ORGANIZATION FOR THE RIGHTS  
OF AMERICAN WORKERS INC. . . . . 1  
THE SCO GROUP INC. . . . . 1,14,52  
THE VANGUARD GROUP INC. . . . . 35  
THE WALT DISNEY CO. . . . . 18

THE YANKEE GROUP . . . . . 5  
TIBCO SOFTWARE INC. . . . . 11  
TIME WARNER INC. . . . . 18  
TOYOTA MOTOR CORP. . . . . 34  
TRACTION SOFTWARE INC. . . . . 23  
TRENG MICRO INC. . . . . 5  
TWIN INTERACTIVE INC. . . . . 10  
U.S. ARMY . . . . . 23  
U.S. DEPARTMENT OF DEFENSE . . . . . 14,23  
U.S. SECURITIES AND  
EXCHANGE COMMISSION . . . . . 4  
UNITED PARCEL SERVICE INC. . . . . 37  
UNIVERSITY OF CALIFORNIA,  
BERKELEY . . . . . 5,31  
UNIVERSITY OF IOWA . . . . . 28  
UNIVERSITY OF MICHIGAN . . . . . 30  
UPSHOT CORP. . . . . 6  
VA SOFTWARE INC. . . . . 18  
VANQUISH INC. . . . . 8  
VERITAS SOFTWARE CORP. . . . . 34  
VMWARE INC. . . . . 34  
VOTER SOLUTIONS INC. . . . . 28  
WAL-MART STORES INC. . . . . 1,19,51  
WAVEXPRESS INC. . . . . 28  
WEBEX COMMUNICATIONS INC. . . . . 24  
WEBMD CORP. . . . . 19  
YAHOO INC. . . . . 18,19  
ZELOS GROUP INC. . . . . 37  
ZONE LABS INC. . . . . 5



Continued from page 1

## Retail RFID

demonstrated far less knowledge about how the technology works. But as the new year begins, the executives are expressing great interest now that Wal-Mart Stores Inc. has directed its top 100 suppliers to put RFID tags on pallets and cases they ship to the retailer's three Texas distribution centers by next January.

"I'm sure Wal-Mart will help the industry by basically driving the requirement and driving the price points to make it more affordable," said Alan Lacy, CEO of Sears, Roebuck and Co. He said Sears will adopt RFID "as it makes economic sense," since it expects to see benefits in the areas of inventory tracking and theft protection.

### Creating Momentum

"For every new technology, there tends to be somebody who creates the momentum, whether it be bar codes or EDI," said Phillip Maxwell, CIO at The Neiman Marcus Group Inc. in Dallas. "I think that's what happened here."

Maxwell said the high value and uniqueness of his company's products will make them good candidates for RFID tags. But he expects it to be at least three years before Neiman Marcus uses RFID, because the company will require item-level tags. The first phase of RFID will be at the pallet and case levels, he said.

But several retailers said they're anxious to get to item-level tagging. Brian Devine, CEO of Petco Animal Supplies Inc. in San Diego, said he can envision the day when a customer will be able to simply push a shopping cart through an RFID-enabled arch and swipe a credit card to pay for his purchases, with no individual scanning necessary. He said another arch could disen-

gage the tags for privacy-conscious customers.

But while Devine can foresee pallet-level tagging within the next three years, he expects that it will take much longer for item-level tagging because of the costs, not only of the tags but also of the infrastructure that goes with it.

Some retail analysts predicted that it could take more than a decade for item-level tagging to gain wide usage among mass retailers. Christine Overby, an analyst at Forrester Research Inc. in Cambridge, Mass., estimated that it will take five to seven years for the rollout of RFID in the supply chain and two decades for item-level tagging on the consumer end because of privacy implications and "sheer costs."

Early adopters are also cautious in their predictions for item-level tagging. Wal-Mart isn't even doing it yet. Metro Group, a German retailer, is piloting item-level tagging, but CEO Hans-Joachim Körber said it will take 10 to 15 years to gain universal acceptance [QuickLink 44114].

Colin Cobain, IT director at U.K.-based retailer Tesco PLC, said his company's pilot with Gillette razor blades showed that the technology works, but the cost of the tags and readers was too high to bring a return. Tesco is currently negotiating with its reader and application provider to finalize a business case for tagging DVDs, but Cobain is cautious.

### Happy to Wait

"I don't want to be the guy who's actually going first and making it a real cheap case to anybody who follows," he said.

That attitude is shared by many other retailers, which are happy to benefit from the lessons learned by early adopters such as Wal-Mart.

"I don't ever want to be a leader on things like that because there's no advantage — but you can be a quick copier," said Allen Questrom, CEO of

J.C. Penney Co. in Plano, Texas. "Why pay a lot of money when things are going to change, and you've got to be able to adapt to the changes?"

Questrom said he was the "last person" to move to Internet-based retailing because he couldn't figure out how to make money on it. He said his site now makes money.

Bruce Nelson, CEO of Office Depot Inc. in Delray Beach, Fla., predicted that adoption will vary by industry, and he's content to "wait and see how it unfolds." Nelson said he has business, IT and

logistics staffers studying RFID, and he expects that the company will try it within two to five years because of the "enormous potential payoff."

But Nelson has concerns. He cited the risk of adopting technology that has yet to be standardized as well as the expense of the tags, readers and systems integration. He added that it won't make economic sense to tag small-ticket items like pencils, for instance, and he fears that if some products carry tags and others don't, his company could need two systems to handle the data.

Last year, the cost of the RFID tags — which currently ranges from about 25 to 50 cents each — appeared to be the major concern among retailers and suppliers. Now their concerns have become broader.

Sears CIO Gary Kelly said the cost of the readers and middleware that will be needed to take full advantage of RFID, not merely the cost of the tags, is driving the economics. "You really have to have pervasive read capability wherever you apply this," he said. **44258**

# Oracle to Add RFID Support to Its Apps

Will also announce new pricing, outsourcing options at AppsWorld

BY MARC L. SONGINI

AT ITS ANNUAL conference for users of its business applications this week, Oracle Corp. will unveil new software pricing and outsourcing options as well as plans to embed radio frequency identification (RFID) technology in its products.

Oracle said in a written statement that it plans to discuss its RFID strategy at the AppsWorld event, which is due to begin tomorrow in San Diego. The company also will make other announcements related to its E-Business Suite 11i line of applications, but it declined to provide any details. Nor would it say when the RFID technology is scheduled to become available as part of 11i.

Oracle would be the second major applications vendor to embrace RFID this month. Two weeks ago, ERP market leader SAP AG said it had bundled RFID data manage-

ment capabilities into some of its applications, including its SAP Event Management supply chain module [QuickLink 44133].

The RFID enhancements being promised by Oracle are of interest to Gary Concannon, manager of the business technologies department at Sandia National Laboratories in Albuquerque and a member of the board of directors at the independent Oracle Applications Users Group.

### Tracking Lab Equipment

Sandia runs Version 11.5.8 of Oracle's financial, manufacturing and procurement applications. Concannon said he wants to use integrated RFID technology to track the billions of dollars' worth of testing equipment installed in the lab via a wireless network.

He's also interested in learning more about Oracle's business intelligence tools at AppsWorld, as well as the possibility of using its software

portal as a window for all end users to access the 11i suite.

Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Daly City, Calif., said SAP, Oracle and other ERP vendors accelerated their push to support RFID after Wal-Mart Stores Inc. mandated last June that its top 100 suppliers adopt the technology in their supply chain operations by January 2005 [QuickLink 39181].

Despite the planned RFID announcement and the other new developments, Oracle's focus at AppsWorld will likely be on more routine issues, such as upgrade cycles, rather than major technology rollouts, Greenbaum said.

He added that Oracle needs to do more marketing of its applications, as opposed to its database and infrastructure software business. The company has also been focusing too much attention and energy on its hostile bid to buy rival PeopleSoft Inc. and not enough on developing its own internal strengths and structure, according to Greenbaum. **44240**



FRANK HAYES ■ FRANKLY SPEAKING

# Weirder & Weirder

**Y**OU PROBABLY THOUGHT things couldn't get any weirder with The SCO Group and Linux, didn't you? Of course they could. Last week, the company that claims all Linux users owe it royalties sued Novell for "slander of title." Now *that's* weird. Impressive, certainly — "slander" gives it a sort of Hollywood-starlet-vs.-supermarket-tabloid sexiness. But chances are, unless you're a lawyer, you don't have the slightest idea what it means.

Now, why would SCO want to confuse you that way?

Here's the background: Last summer, SCO claimed that it owns all the copyrights associated with Unix and that Novell sold it those rights in a 1995 contract. That's important to SCO's legal claims, because SCO needs to own the Unix copyrights in order to sue Linux users for infringing them. No Unix copyrights, no Linux copyright-infringement suits.

But Novell said SCO was wrong — first privately in letters to SCO, and later publicly. Novell said that it didn't sign away its Unix copyrights in that 1995 contract and that it still owns all the copyrights to Unix.

Sounds like a contract dispute, right? SCO claims the 1995 contract says one thing; Novell claims it says something different.

But instead of filing a contract lawsuit, SCO has sued Novell for "slander of title."

What is that? Slander of title is usually invoked when someone owns real estate and someone else questions that ownership, making it difficult or impossible for the owner to sell the property.

Applying that idea to Unix copyrights, SCO says Novell has publicly claimed that SCO doesn't own those copyrights — thus discouraging Linux users from paying royalties to SCO.

Yes, that's a weird way to approach what's really a contract dispute over software copyrights. And that's telling, because there's only one reason why lawyers choose an oddball way of pursuing a suit. They do that when it looks like the straightforward approach won't work.

Judges like straightforward approaches. Juries do, too. And it's a judge and jury that will eventually have to decide what that 1995 contract said and who should own the Unix copyrights.

If SCO's lawyers could make a

good case with a contract lawsuit, they would. Apparently, they can't.

It turns out that SCO's lawyers aren't likely to have much luck with a slander-of-title suit either. It won't pry loose the Unix copyrights from Novell, since that's a contract issue that's not affected by any of Novell's public statements. And a slander-of-title lawsuit is likely to be tossed out by a judge, whose first question will be, "Why didn't you file a contract suit?"

Ah, but until then, it *sounds* impressive, doesn't it? Almost as impressive as SCO's recent claim that open-source software is unconstitutional, or as the letter SCO sent to members of Congress insisting that Linux is a threat to the U.S. economy and national security. It may all be meaningless, but it looks pretty good in press releases and news stories.

So why *would* SCO want to be sowing all that weirdness and confusion?

Could it be for the same reason that SCO has had such trouble coming up with convincing examples of copyright infringement? And credible evidence of IBM contract violations? And a viable defense against the lawsuit Red Hat filed against SCO last August?

After all the success SCO's management has had using legal threats to pump up the stock price from less than \$1 per share to more than \$20 late last year, could it be that SCO's executives — or at least its lawyers — figured out months ago that SCO hasn't got a case against Linux?

Could it be that they keep piling on the lawsuits and the rhetoric for fear that if they stop now, SCO's stock price will collapse and they'll be buried by shareholder lawsuits and an SEC investigation?

Naaah — that would just be too weird. ☎ 44217



FRANK HAYES, *Computerworld's* senior news columnist, has covered IT for more than 20 years. Contact him at [frank\\_hayes@computerworld.com](mailto:frank_hayes@computerworld.com)

## Seemed Like a Good Idea . . .

This executive's laptop always fails during takeoff on the company's private jet. After the laptop checks out OK on the ground, IT pilot fish gets a directive: Ride up and down in the plane as many times as necessary to troubleshoot it. "After several takeoffs and landings, it was determined that the laptop had a loose wire that moved with the force of takeoff," sighs fish. "It cost more for testing than a new laptop would have cost."

### Nice Try

Company policy allows only IT people to move PCs. So this sup-



the company, the whiteboard is moved to the IT conference room — but is

port pilot fish is irritated when he eyeballs the reason for one remote user's network problems — the cable is being crushed by a cubicle wall. "We moved the PC to the other side and then lifted the wall and threw the cable underneath and then reconnected it," user explains. Fish: Why didn't you call me to do it for you? User: "We didn't want you to have to make the trip out here."

never plugged in or hooked up to a PC. After six months and several attempts to get the board working, pilot fish asks technology manager what the problem is. "The power supply seems to have been lost during the move," manager says. "I'm pretty sure it will work if we find the power supply. We just haven't made it a priority, since no one really uses it."

### Brilliant Idea

IT pilot fish is watching the shop during a big company celebration, when at 11 p.m. a call comes in: The server won't respond. Fish heads to the server room to check it out. "And it was about 110 degrees in there," fish says. Seems the celebration's finale included fireworks launched from the roof. "Engineering decided that the air conditioning would suck the smoke into the building," grumbles fish. "So they shut it off."

### How Would They?

This CIO buys an electronic whiteboard for his office. When he leaves

### Change of Plan

The plan: When the baby comes, this outsourcing pilot fish will turn over his projects, with updated notes, and take a month's vacation. The call, 11 a.m.: "Her contractions were mild and 10 minutes apart," fish reports, "so I told her I'd be home by midafternoon, as soon as I wrapped up the last of my turnover duties." The second call, 11:11 a.m.: "Her mother suggested I get my butt home right then, or she would be coming to get me," says fish. "I considered my turnover complete and told my boss so — over my shoulder, as I bolted for the door."

**FEED THE SHARK!** Send your true tales of IT life to [sharky@computerworld.com](mailto:sharky@computerworld.com). You snag a snazzy Shark shirt if we use it. And check out the daily feed, browse the Sharkives and sign up for Shark Tank home delivery at [computerworld.com/sharky](http://computerworld.com/sharky)





## Server blades engineered to work across complex computing environments.

HP ProLiant server blades, powered by Intel® Xeon™ processors, are designed to support a variety of robust enterprise solutions, including SANs. It is not difficult to appreciate the architectural excellence of the new HP ProLiant BL40p and BL20p G2 server blades. They're the most powerful, flexible, industry-standard blades for business today. In addition to meeting your company's expanding needs for server capacity, they're designed with SAN connectivity to support sophisticated storage environments—easily, reliably and affordably. Combined with HP ProLiant Essentials software, they can dramatically reduce deployment time and help maximize productivity. Which means, of course, your business saves money. Demand more from your IT systems. Integrate HP ProLiant server blades into your environment. And carry your business to a stronger, more cost-effective place.



### HP PROLIANT BL20p G2

- Up to two Intel® Xeon™ processors DP 3.20GHz
- Available with three 10/100/1000 NICs and one management NIC plus dual 2Gb fibre channel mezzanine card
- Up to 8GB DDR memory
- Optional Rapid Deployment Pack software allows for quick multi-server deployment

### Complements ProLiant server blades



### HP MODULAR SMART ARRAY 1000

ProLiant servers and the MSA1000 have been engineered to work better together. To safely migrate data in a SAN environment, simply remove ProLiant drives and insert them into the MSA1000.



Demand more with HP ProLiant server blades. Download IDC's white paper, "Enabling Business Agility Through Server Blade Technology" at [www.hp.com/go/proliant10](http://www.hp.com/go/proliant10) or dial 1-800-282-6672, option 5 and mention code AKWX.





## Minimize costs. Maximize utilization. Virtualize your storage.

HP's virtualization solutions simplify storage management while making the most of the storage you already have. Your data storage needs keep expanding. Your budget keeps shrinking. HP's EVA3000 and EVA5000 virtual arrays can solve both problems. They let you pool your storage, so it can be instantly assigned wherever, whenever and in whatever amount it's needed. Efficiency doesn't come at the expense of complexity either, thanks to an intuitive Web interface. And HP is the only company that offers host, network and array-based virtualization solutions. Lower costs. Higher utilization of your assets. It's a virtual no-brainer.



### HP StorageWorks EVA5000

- Modular virtual RAID storage for effective SAN data administration at minimal costs.
- Automated array management removes boundaries of traditional storage.
- Outstanding self-tuning performance with scalable capacity on demand.
- Highly available platform offering stability and proactive services.



Demand more efficiency. Download ZDNet's white paper "Doing More with Less with HP StorageWorks EVA5000 or HP StorageWorks EVA3000" at [www.hp.com/go/storage2](http://www.hp.com/go/storage2) or dial 1-800-282-6672, option 5 and mention code AKWA.